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ORIGINAL ARTICLES

SOME INTERESTING OBSERVATIONS ON THE ORAL METHOD OF CHOLECYSTOGRAPHY*

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Up to the time of the discovery of the "Graham Test" roentgenography of the gall bladder had in our hands at least been most unsatisfactory. A low percentage of gall stones contained sufficient opaque salts to cast a shadow, a lower percentage showed a gall bladder shadow which was of sufficient density to be considered pathological, a still lower percentage showed pressure defects on the outline of the stomach or duodenum from gall stones or an enlarged gall bladder and in a number of cases we were able to recognize adhesions of cholecystitic origin. Even with all these direct and indirect indications it is safe to say that in not over 50% of our cases were we able to make any sort of a reliable diagnosis and this, as a rule, was "late effects of gall bladder disease."

Since Drs. Graham, Cole and Copher have shown us how to render the bile opaque to the x-ray and thus make it possible to visualize the gall bladder we have been able to materially increase the percentage of our correct roentgenographic findings in cholelithiasis and pathology of the gall bladder.

The intravenous injection of tetrabrom and tetraiodo phenolphthalein as recommended by the originators of the method was so unsatisfactory in the authors' hands that we were forced to discontinue the technique. This was largely due to the systemic reaction, local necrosis and phlebitis which occasionally occurred. It became evident at once that if there was any hope of visualization of the gall bladder becoming as valuable as the visualization of the gastrointestinal tract the method must be simplified so that it could be safe and could be used as a routine office procedure not requiring the hospitalization of the patient. Investigations were then made with the oral administration of the dye. Whitaker and Milliken had shown us that we could obtain the same roentgenographic results with one half the amount of tetraiodo as we did with tetrabrom so we adopted the use of

the iodine salt. Experience taught us, however, that this form of dye was a very unstable drug, subject to rapid deterioration from light and air. To overcome this difficulty some of the chemists were persuaded to supply it in sealed colored ampules, a single dose of 3.5 grams in each.

We now place the fresh drug from the ampule into eight plain gelatine capsules which are dipped into a solution of keratine and allowed to dry. This seals them air tight and covers them with a coating which prevents them from being broken up in the stomach. Some question as to this statement was made by Dr. W. A. Bastedo, who claimed that keratine was not a satisfactory enteric coating. In order to satisfy all concerned, working on the basis that the reaction of the patient would be the best criterion, we gave 100 consecutive cases keratine coated capsules with the following results—7% had a vomiting attack, 8% had diarrhea varying from two to eight loose movements and 11% had nausea. For comparison we then gave 100 consecutive cases the dye in plain gelatine coated capsules without the coating. Our results were rather astonishing—12% had vomiting, 12% diarrhea and 15% nausea. None of the cases had a reaction sufficient to prevent them from appearing at the office the following morning for roentgen examination. From this experiment the conclusion is reached that so far as reaction is concerned there is very little difference whether you use keratine coated or plain gelatine capsules—in both cases the visualization of the gall bladder was satisfactory. Up to the present time, however, the authors prefer the coated capsules. They should be made up fresh for each case.

The administration of fresh dye, in a great measure, has overcome any unreliability in the x-ray findings following the oral administration of the dye. In fact, we now have sufficient confidence in the method to use it routinely in our office; it is simple and efficient and can be carried on much the same as investigations of the

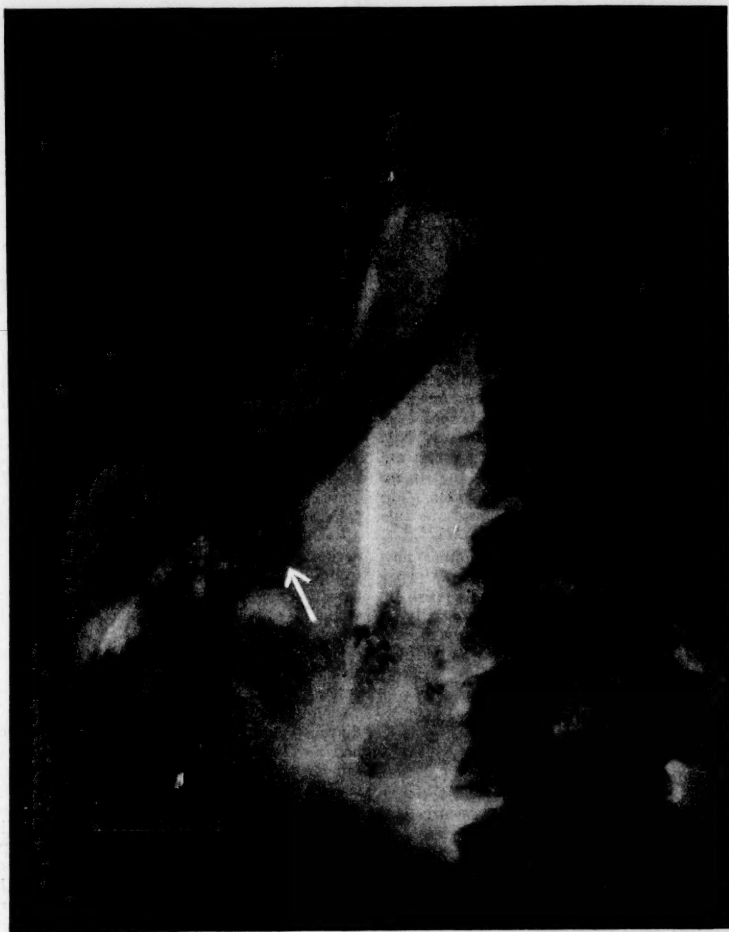
*Read before the New England Roentgen Ray Society November 19, 1926.

gastrointestinal tract with the barium meal.

It is well to state that the work is difficult; at times it tries the skill of the roentgenologist to the utmost and necessitates the use of every known x-ray "stunt" in the making of a gall

of success. Other things being favorable, the use of a gas tube and compression on a Potter Bucky Diaphragm will give the best results.

In making a roentgenographic examination of the gall bladder by the oral method the follow-



NO. 1. The peanut gall bladder—Film taken 16 hours after 45 grains of Tetraiodo by mouth. Gall bladder is filled with small non opaque stones. Also note malposition.

bladder examination; particularly does it require an intelligent patient who can and will suspend respiration during the making of the films. Reassurance on the part of the doctor and confidence on the part of the patient are absolutely essential before there can be any hope

ing technique must be accurately followed. The gastrointestinal tract should be thoroughly cleansed. This is best accomplished by a mild cathartic administered the night before the preliminary examination followed by a simple enema in the morning. This preliminary, or ex-

amination of the gall bladder before the administration of the dye, is best made in the afternoon. At 6:30 PM the following meal is advised: A thick soup, creamed chicken or three soft boiled eggs, baked potato if desired, bread

patient reports at the office the following morning at 9:30, twelve hours after the administration of the dye, without breakfast. Starvation is continued, and four hours later, at 1:30 PM the examination is repeated. Lunch is then



NO. 2. Film taken 16 hours after 45 grains of Tetraiodo by mouth. Note shadows of fifteen medium sized non opaque gall stones in elongated gall bladder.

and butter and a glass of milk. Commencing at 9:30 PM two capsules of tetraiodo prepared as recommended are given every fifteen minutes with a small glass of water until the entire eight (3.5 grams) have been taken. This is the average dose in an individual weighing 150 lbs. The

allowed consisting of cream toast, soft boiled eggs and a glass of milk. This is followed by another examination one hour later. The patient reports the next morning for the final observation.

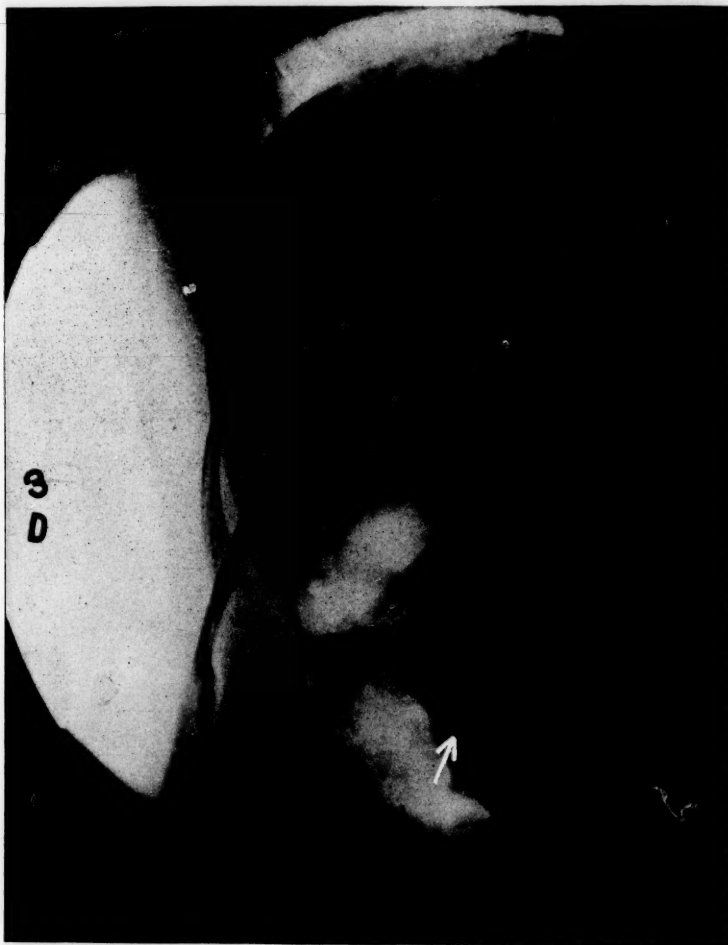
At least three roentgenograms should be made

at each observation. It is well to develop one of these to be sure that the position and exposure are correct.

It is important to make a preliminary examination before the test, for the findings may be

by a comparison of the shadow with and without the test.

Following the conclusions of Boyden's experiments the fatty meal at 6:30 PM is given to empty the gall bladder so that it will reach the



NO. 3. Film taken 16 hours after 45 grains of Tetraiodo by mouth. Note enlarged gall bladder with three medium sized non opaque gall stones.

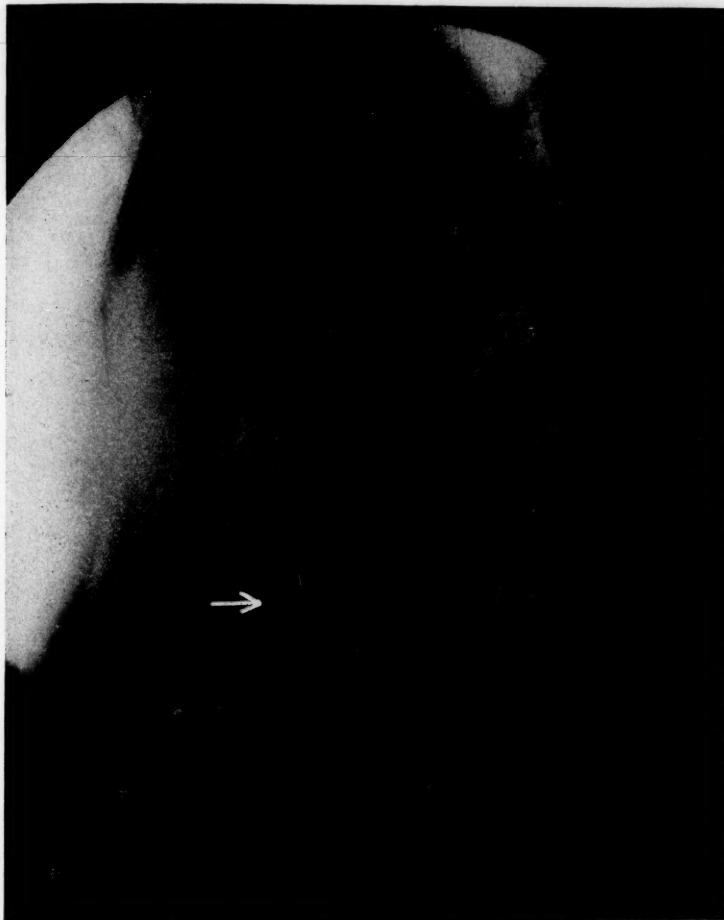
such as to make a diagnosis possible without the use of the tetraiodo. Visible gall bladders must be checked up with the dye. In more than one instance a shadow supposedly a gall bladder and reported pathological has been proven otherwise

period of slow filling by the time the bile becomes opaque, which is usually five to six hours after the administration of the dye.

In normal cases the shadow of the fully distended gall bladder should appear 10 to 12 hours

after the tetraiodo is given. The starvation continuing, four hours later the shadow should be slightly diminished in size and become more intense, concentration being at its maximum point at this hour; as soon as food is given the

an extent that it *can absolutely be relied upon*, it is obvious that our attention must be centered on the interpretation. It is now apparent that gall bladder lesions are recognized by both direct and indirect evidence. The most important



NO. 4. Film taken 16 hours after 45 grains of Tetraiodo by mouth. Note deformity of fundus of gall bladder caused by adhesions.

gall bladder outline should further diminish in size or completely disappear. The following morning, thirty-six hours after the test, there should be no remaining shadow of the gall bladder.

The technique having been developed to such

of the *direct* signs is the actual visualization of non opaque gall stones; these stones are recognized as circular negative shadows surrounded by opaque bile. Some stones are not entirely non opaque; the quantity of calcium salts, however, is so small that the detail without the dye

is unsatisfactory. With the dye the roughened surfaces absorb sufficient of the opaque bile to accentuate their shadows so that they are readily recognized. Mottling of the gall bladder indicates small stones. One must be *extremely* care-

Even with the aid of the dye all gall stones cannot be visualized. It has happened that a calcium stone shown with the ordinary method of examination has completely disappeared by being overshadowed with the opaque bile; and



NO. 5. Film taken 16 hours after 45 grains of Tetralodo by mouth. Note deformity of fundus caused by adhesions.

ful in this interpretation, however, for gas in the duodenum often assumes small circular shadows which are very similar to non opaque stones. The danger of misinterpretation is much greater when the duodenal shadows overlap those of the gall bladder.

no doubt at times this occurs with non opaque calculi.

In the study of many series of cholecystograms we note that not infrequently a small non opaque gall stone will become visible as the gall bladder empties. Distension, while necessary in

studying the function, often completely obliterates shadows within the lumen of the gall bladder. Paradoxical as it may seem, the test in some cases brings out the gall stone shadow while in others it covers it up, thus demonstrat-

cystitis, the surgeon at operation not only found a gall bladder with thickened wall but stones as well. Here the shadow of the opaque bile in addition to that cast by the thickened wall of the gall bladder completely overshadowed the



NO. 6. Film taken 16 hours after 45 grains of Tetraiodo by mouth. Note contracted thickened wall gall bladder containing one large non opaque gall stone.

ing the necessity of examinations both before and after the test as well as during the filling and emptying of the gall bladder with opaque bile.

In a number of cases where the disturbance of function or deformity indicated a chronic chole-

gall stones. In other cases the gall bladder was packed with non opaque stones and as no dye-impregnated bile could enter, the stones were not recognized. The pathology was indicated by a "no shadow" finding.

The second indirect sign is deformity of out-

line. This may be due to a number of causes, the most common being adhesions. These adhesions may be of gall bladder or omental origin. When they are caused by cholecystitis the shadow is more apt to be deformed and the edges are likely to be roughened and irregular. When caused by omental adhesions the deformity is present but as a rule the edges are clear cut and the entire outline of the gall bladder quite distinct. Adhesions of peri-cholecystitic origin may involve the duodenum, liver or colon without producing deformity. This can be recognized by malposition and fixation.

It is often difficult to differentiate between a deformed gall bladder due to pathology and one due to pressure or posture.

As our experience becomes more extended we find a considerable number of cases showing anomalous deformities; these may be in the nature of sacculations, angulations or even inversions. Here the differentiation requires an extra amount of good judgment.

One must bear in mind that one of the most important values of the Graham Test is in the detection of disturbance of function of the gall bladder. Up to the present time this disturbance has been recognized by four different variations to the normal sequence of the gall bladder shadow as it appears after the oral administration of the dye. These may be enumerated in their order of importance as follows:

1. Absence of shadow.
2. Persistence of shadow.
3. Faintness of shadow.
4. Late appearance of shadow.

1. ABSENCE OF SHADOW

Any obstruction to the cystic duct either from an intrinsic or extrinsic cause will prevent the opaque bile from entering the gall bladder, giving a "no shadow" finding. The most common cause of obstruction is from a stone or stones. Stricture of the cystic duct will obviously give the same finding. Obliteration of the lumen of the gall bladder, the result of an old chronic inflammation or a gall bladder packed with stones, will also fail to give a shadow. One must not forget that impaired liver function may fail to provide sufficient opaque bile to cast a shadow.

It is well to pass on a word of warning in "no shadow" cases. Always confirm the findings by a reexamination to be sure it is not due to some fault in the technique. When you make the reexamination use the oral method again. Do not recommend the checking of the oral method by the intravenous. It is not necessary.

2. PERSISTENCE OF SHADOW

When the shadow of the gall bladder does not markedly diminish in size after food and persists thirty-six hours after the administration of

the dye we may reasonably conclude that the normal function is interfered with by pathology. This deduction has been repeatedly proved to be correct by the surgical findings in these cases.

3. FAINTNESS OF SHADOW

When one has perfected and standardized the technique to such an extent that it can absolutely be relied upon then the finding "faintness of shadow" is of great importance, for it means a disturbance to the concentrating power of the gall bladder. "Faintness of shadow" is often associated with "persistence of shadow," the causative factor being much the same. Faintness of shadow and mottling are the two most treacherous findings. Be extremely careful in these interpretations. Do not hesitate to make a confirmatory examination.

4. LATE APPEARANCE OF THE SHADOW

This is rather a rare finding but must be mentioned for in three cases in our series the gall bladder shadow did not appear until thirty-six hours after the dye was given. All were proved to be pathological; the gall bladder wall was thickened and in one stone were present which were not recognized by the roentgen examination.

In no instance should we fail to examine the gastrointestinal tract; many times the supporting evidence of duodenal or intestinal adhesions to the gall bladder or pressure defects confirms what may have been a questionable diagnosis. All cases referred to us for gall bladder examinations have the stomach and colon gone over after the completion of the tetraiodo test.

There has been considerable controversy as to the relative value of the intravenous when compared with the oral method of applying the test. Let each one use whatever method he is most successful with—we unhesitatingly recommend the oral administration. It is, in our hands, the most simple and safe method of visualizing the gall bladder that we have and it can be used in office examinations without in any way incapacitating the patient. We do not admit that the oral method, properly carried out, is less reliable than the intravenous; in fact, we particularly take exception to such a stereotyped assertion and the analysis of 100 consecutive cases examined by the oral method would seem to prove our contention.

ANALYSIS OF 100 CONSECUTIVE CASES EXAMINED BY THE ORAL METHOD

Description	No.	Oper- ated	Cor- rect	Per Cent
Gall-bladder shadow with dye	91	—	—	91
No shadow	9	7	7	100
Persistence	16	4	3	75
Faint shadow	18	6	6	100
Late appearance	1	1	1	100
Gall-bladder shadow without dye	9	2	2	100

Gallstones without dye.....	8	3	3	100
Gallstones with dye.....	26	12	11	91
Pathological gall-bladder with stones.....	34	15	14	93
Pathological gall-bladder without stones.....	26	1	0	0
Total cases reported pathological with or without stones.....	60	23	21	91
Total cases reported negative.....	40	1	1	100
Deformity.....	6	None		
Adhesions between gall-bladder and duodenum.....	11	4	3	75
Adhesions between gall-bladder and colon.....	5	1	1	100

DISCUSSION

DR. L. R. WHITAKER, Boston: At the Peter Bent Brigham Hospital we have been interested in the oral method of cholecystography ever since it was first noticed that reabsorption of the salt after the intravenous method produced a shadow, and some of our house officers drank the raw solution of sodium tetraiodophenolphthalein in the beginning of the development of the test. Realizing its obvious advantages we have done what we could to perfect the method. We have tried several preparations, the most satisfactory of which has been that of Davies, Rose, and Co. However, from our experience of 600 cases by the oral method and 400 by the intravenous, we feel no hesitation in making the definite statement that the intravenous method is more reliable. The oral method is of great value in ruling out numerous normal gall bladders, but in cases of doubt, before subjecting the patient to an operation, we always confirm the diagnosis by the intravenous method.

There is one obvious disadvantage with the oral method which will never be completely overcome as long as sodium tetraiodophenolphthalein is used—the salt is a gastro-intestinal irritant. All possible measures should be taken to obviate this effect. The gastric mucosa should be protected from the chemical. If anyone doubts this let him take some of the salt in plain capsules or drink some of the solution on an empty stomach. There should also be some food in the intestine to protect the mucosa. In spite of these precautions, and no matter what method is used, a certain number of reactions will be obtained, though never severe enough to be serious.

I would like to reemphasize Dr. Stewart's exhortation that the technique must be good and the interpretation skillful. Many results have been marked as failures because the shadow was behind the spine, or the patient had breathed, or the roentgenologist did not recognize the shadow when he saw it. The interpretation of mottling must be guarded; the duodenum usually overlaps the mesial border and the colon the lower border of the shadow, consequently mottling in the upper and outer part of the shadow is most significant.

One of the most important diagnostic criteria, after those originally set forth by Graham and Cole, was developed at the Peter Bent Brigham Hospital. In the very first subject in which the test was tried Drs. Milliken, Sosman, and I noticed a marked reduction of the shadow after a meal rich in fat, and from that time we have used and advocated that procedure as a test for functional activity of the gall bladder. I have shown by the observation of cats with gall bladders previously filled with iodized oil at laparotomy, that the smooth muscle of the viscus is the expulsive agent. If in a patient, then, the shadow is markedly reduced in size after a fat meal, we know that the musculature is active. This may be true even in the presence of stones. It has been our custom to make films one hour after the meal, but they should be made two hours, and even three hours afterward. If we see a moderate shrinkage of the shadow at the end of an hour we know that the musculature is active, but we do not know that the gall bladder is not partly filled with stones or debris. But if we see it shrink down to one-tenth or one-twentieth of its original size in two or three hours, or if it disappears within that time, we are almost certain it is normal.

There is one interesting deduction that can be drawn from the fact that emptying is produced by muscular activity. If we get a good shadow of the gall bladder we are sure that the musculature is functioning; if we get even a faint shadow we are sure it is active to some degree. Because if the wall of the gall bladder were sclerotic enough to prevent muscular activity the viscus could not empty. Consequently it would remain full of whatever it happened to contain at the time—stones, or mucus, or debris—and could not refill with the dye.

But there is one caution that must be observed with regard to these deductions from filling and emptying. I have found that with animals in poor condition the musculature is inhibited and there may be no emptying after a fat meal. It is conceivable that in patients with gastrointestinal disturbances or in those suffering from debilitating disease, the gall bladder may, from previous failure to empty, be distended with concentrated bile at the time the test is done, and no shadow obtained, even though the organ is normal. Incidentally it seems to me that stasis thus produced is an important factor in the etiology of gall stones. I have produced stones in animals by simply altering the mechanism in such a manner that the gall bladder did not normally fill and empty.

The important diagnostic criteria for cholecystography, then, are:

1. (a) The filling of the gall bladder, indicating an active musculature; or (b) the failure to fill, indicating blockage of the duct, or lack

of normal emptying from destruction of the musculature.

2. The gradual reduction and disappearance of the shadow within 2 to 3 hours, indicating an active musculature, and the absence of debris.

3. Mottling, if definite, indicating stones.

ABSTRACT OF DISCUSSION, CONTINUED

DR. FRANK LAHEY discussed Dr. Stewart's paper from the standpoint of the surgeon and stated that it was not fair to decide to operate on a patient from a single test such as cholecystography, but that the decision should be made by the surgeon with due consideration of all the factors and information available. He said further that if operations were decided upon, it was better to remove the gall bladder than to do a cholecystotomy. The figures from the Deaconess Hospital, as collected by his assistants, showed that the pre-operative diagnosis from the cholecystograms was correct in 78% of those having the intravenous method with 29% reaction, as compared with 92% correct interpretations by the oral method with 32% reactions.

DR. JOHN SPROULL of Haverhill reported a method he had been using whereby he fed the patient 2.5 gm. of the dye mixed through six tablespoons of cream of wheat. This was given in place of the evening meal and the patient reported as usual the following morning without breakfast, for roentgen examination. Of 23 patients examined by this method good shadows of the gall bladder were obtained in 21. Three patients had nausea, two vomited, and two had diarrhoea.

DR. CHESTER JONES of the Massachusetts General Hospital reported that in one case a normal shadow had been obtained in a patient with a markedly diseased gall bladder, and said that in

several cases of duodenal ulcer no gall bladder shadows had been secured. Furthermore, cases of hepatitis or other liver involvement might fail to give a normal cholecystogram which would be misleading and he suggested cholecystographic studies of patients with chronic passive congestion to determine their liver function.

DR. RALPH D. LEONARD in his discussion stated that cholecystography should not be used as the sole roentgen examination of the gall bladder, but that it should supplement the indirect method as advocated by George and Leonard, and that all patients should have a barium gastro-intestinal examination.

DR. JOHN H. LAMBERT of Lowell in his discussion stated that the greatest caution should be used in reporting cholecystitis or a normal gall bladder as evidence for or against operation, as, in his opinion, cholecystography was a test of function and did not decide the presence or absence of a pathological process in the gall bladder.

DR. STEWART, in closing, answered several questions from the floor and stated that most of the information on which he based his work was obtained from Boston institutions, and that he appreciated the privilege and honor of appearing before a society which had done so much to further the knowledge of this particular subject. In answer to Dr. Whitaker's discussion he took exception to the statement that the intravenous method was more reliable than the oral method, and suggested that if Dr. Whitaker would use the capsules as directed in the paper, he would find the methods at least equally reliable. As to Dr. Sproull's report he said that many similar methods were tried at the beginning of the work on cholecystography and were abandoned as unsatisfactory.

THE ROENTGEN RAY DIAGNOSIS OF SUBDIAPHRAGMATIC ABSCESS*

BY FREDERICK W. O'BRIEN, M.D.

By subdiaphragmatic or subphrenic abscess, I understand a collection of pus below the diaphragm and in contact with it.

The mortality from this disease is appalling. Early diagnosis and operation only can reduce it.

My interest in the subject is the result of having seen a relatively large number of patients in whom, by correlation of the history and clinical picture with the X-ray findings, the diagnosis seemed as certain as anything we have in medicine.

Indeed Pancoast¹ dismisses the subject with

the statement that the roentgen ray diagnosis of subdiaphragmatic abscess is a comparatively simple matter.

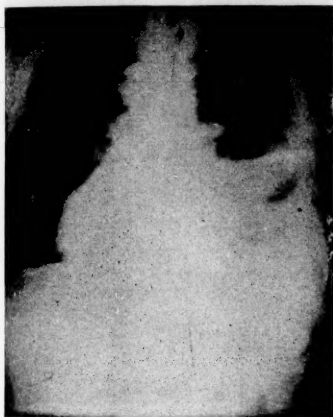
This reflects the current impression of the roentgenologist, but has not taken hold generally, which must be the case if early diagnosis for patient and surgeon are essential.

Two kinds of subdiaphragmatic abscess are seen: the so-called simple type and the gas-containing abscess. Both kinds of abscess may occur below either diaphragm. The abscess is almost always unilateral, due to the natural protective barrier of the falciform ligament which prevents extension from the right to the left or vice versa.

*Read in part at annual meeting of Radiological Society of North America, Milwaukee, December 1, 1926.

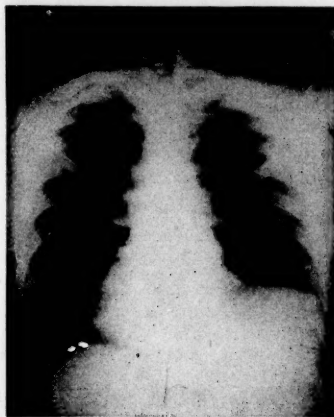
Lockwood,² who reviewed over three thousand cases, states that between 85 and 100 per cent. of all cases not operated on die. Death has been reported in approximately 56 per cent. of all

abdomen, either before or following operation; one-sixth, from extension or adjacent abscess, such as perinephritic; and one-sixth, the result of distant foci, such as carbuncle.



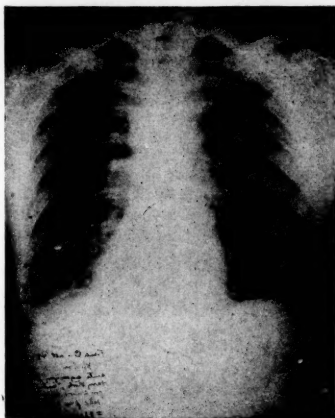
1. Typical right sided subdiaphragmatic abscess, gas type.

patients operated on and not operated on. From 23 to 40 per cent. of those operated on have died. Lockwood feels the mortality rate should be approximately 16 per cent.



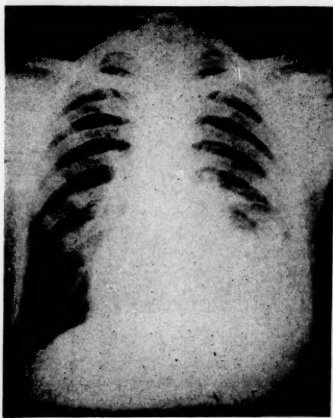
3. Right subdiaphragmatic abscess, non gas abscess type.

Abscesses of the hepatic, appendiceal and duodenal origin form to the right of the suspensory ligament which is the dividing line, and cases of perforation of the stomach and infection of



2. Left sided subdiaphragmatic abscess, gas type.

The location of the abscess depends usually on the primary etiological factor, whether or not it is the result of direct infection by soiling or an infection from a distant focus. Two-thirds of the cases examined by Lockwood were the result of soiling from a viscus within the



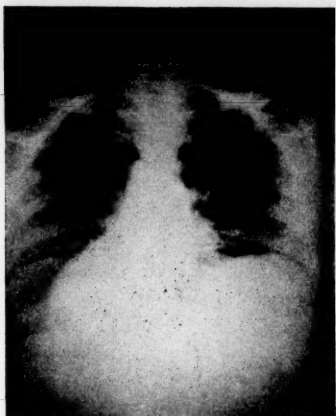
4. Right sided abscess with complications above diaphragm.

the spleen and pancreas form to the left. The mode of spread may be by direct extension, by gravitation from a general or localized peritonitis or direct extension from the lower peritoneal fossa through the portal vein or lymphatics or blood stream. All investigators of

the subject place great weight upon the part played by gravity, especially in the post-operative cases.

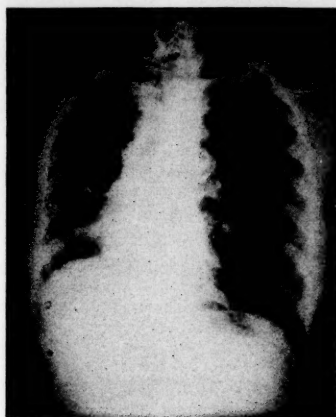
Attention is drawn to the division of the

over the transverse watershed into the pelvis, where it is much less rapidly absorbed and more easily treated. It is less common in females,



5. High right diaphragm seen in a case of diabetes.

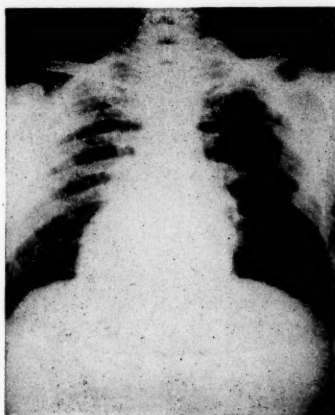
posterior abdominal wall into certain well marked watersheds, by the spinal column longitudinally; transversely by the muscles of the loins, kidneys and perirenal fat separating the



7. High right diaphragm with rotation of heart as seen in chronic pulmonary tuberculosis.

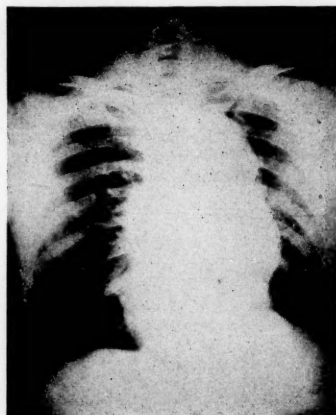
because the paracolic groove allows drainage into the pelvis more readily.

Of the 113 cases reported by Lockwood from the Mayo Clinic, eighty-four occurred in males.



6. High left diaphragm seen in a case of Banti's disease.

subphrenic pouches above the pelvic cavity below. If there is a collection of peritoneal fluid in these subphrenic pouches, it is not easily drained in the male if the patient is allowed to remain supine. If the patient is placed in Fowler's position, it will flow from the former



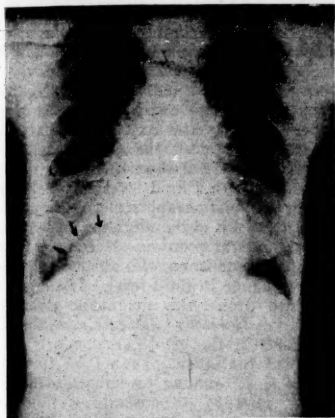
8. High left diaphragm seen in aneurysm.

Fifield and Love³ have recently reported seventy-eight cases (forty-three males and thirty-five females).

The organisms usually found are bacillus coli associated with streptococci and various types of anaerobes. The abscess containing pus and

gas usually follows rupture or soiling from a hollow viscus.

Subphrenic abscess may occur at any age. Morris and Landers¹ refer to a case reported



9. Before pneumoperitoneum thought to be tumor mass involving liver and right diaphragm.

in a patient aged fifteen months. They emphasize the fact first noted by Picque (1910) that although the abscess is anatomically in the abdomen, actually it is within the thorax.

The abscess is usually intra-peritoneal. It may be outside the peritoneum in hepatic, renal and certain appendiceal cases where infection spreads upward in the cellular tissues behind the ascending colon, says Boyd.²

The pathological process, according to Lockwood, is one of infection, liquefaction, necrosis and pus. He states that it requires about two weeks for the abscess to wall off, therefore earlier transpleural drainage should not be considered. Gas was present in approximately one-third of the cases examined by him.

The physical signs may be complicated by upward extension of the process through the diaphragm, giving rise to serous pleurisy or empyema, factors which also complicate the X-ray diagnosis of the condition, but which may be compensated for in great part by taking into account the clinical history, especially in those cases, not of the gas-abscess type, since the latter present very significant X-ray signs.

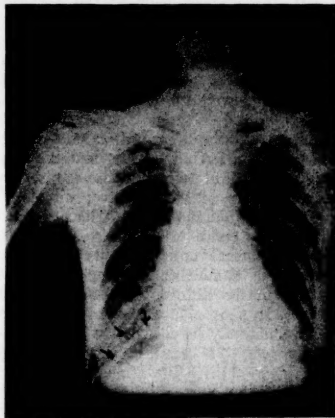
The most helpful signs and symptoms gathered by Lockwood in his intensive and careful study of the disease are the following:

That more than two-thirds of the cases of subdiaphragmatic abscess follow operation, and the condition should be suspected at once in a patient who maintains, for no obvious reason, an elevation of temperature and pulse after operation. Also, a patient giving a long history

of symptoms associated with the stomach, duodenum, gall bladder or appendix that has not been operated upon should be suspected.

That while there is a varying degree of temperature, there is usually a marked variation, the so-called church-steeple type, with an increase in pulse rate and a respiratory rate not in keeping with either the temperature or pulse. Pain at the costal margin referred to the back and frequently to the shoulder, deep pain elicited by pressure over the costal margin from the front to the back or from side to side. The leucocyte count varies; it is usually high in acute cases, but there may be a leucopenia in the insidious type or in patients in the advanced stage of emaciation or with low resistance. Sweating, rigors, short catchy diaphragmatic cough and vomiting and hiccoughs occur in fifty percent. of the cases. There is progressive emaciation and weight loss. In sixty per cent. of the cases, inspection will reveal a mass bulging in front laterally or posteriorly. The abdominal thoracic movement is limited on the affected side, the interspaces over the abscess may be retracted, the liver may be pushed downward.

The physical signs in the cases seen early are



10. After pneumoperitoneum shown to be hernia of diaphragm.

dullness on percussion, diminished breath sounds, pleural friction rub. As the abscess develops, the rub may persist or disappear, with an increase in the area of dullness, percussing down the back, there will be normal resonance, then increasing dullness due to compression of lung, then dullness due to pus, and if gas is present, an area of hyper-resonance, then absolute dullness over the liver.

Examination by roentgenogram and roentgenoscope will reveal the following X-ray evidence of disease:

Simple subdiaphragmatic abscess without complications above the diaphragm: Normally, the right leaf of the diaphragm is higher than that of its fellow on the left. This disproportion is most evident at full inspiration. With the patient standing, the highest point of the dome lies at the upper edge of the fifth rib on the right and at the lower edge of the fifth rib on the left. Roentgenograms, then, should be made with the patient's breath held at full inspiration, which if done in a patient suffering from this disease, the leaf of the diaphragm on the affected side will be found to be elevated in marked disproportion to that of its fellow; the contour of the diaphragmatic dome will be found to be smooth and regular; the costophrenic sulcus clear; the lung fields normal in radiance. On roentgenoscopic examination, there will be immobility of the diaphragm on the affected side. In the differential diagnosis one must consider the normally high-placed diaphragm of the stocky individual. Also the reflex inhibition of the diaphragm which permits it to remain in the expiratory position in pleurisy without effusion and lobar pneumonia. The co-relation of history with the X-ray findings will be a guide here. As Wessler and Jacques⁶ point out, the displacement of the diaphragm will depend on the amount of fluid in the subphrenic space and its relation to the diaphragm. One must remember that pus on the posterior aspect of the liver or a perinephritic abscess may not influence the height of the diaphragm to any extent.

In simple subdiaphragmatic abscess on the left side, uncomplicated, X-ray examination by both the screen and photographic methods will show an elevation of the diaphragm on the left side. It may equal the level of the normal diaphragm on the right or be considerably higher. There is a normal hollow viscus on this side containing air, namely the stomach, which is of great help in the differential diagnosis of this condition. In simple subdiaphragmatic abscess, this air-bubble may be obliterated or transposed far to the left. Its position may be definitely determined by filling the stomach with air or contrast medium.

Eventration of the diaphragm, which most frequently occurs on the left side, and herniation of the diaphragm, may be rather readily ruled out. In eventration of the diaphragm, usually one may observe, by screen examination, a paradoxical movement of the affected leaf, while in hernia of the diaphragm, if traumatic, there will be a history proportionate to the injury, a fractured rib, hemothorax, collapsed lung, besides irregularity of diaphragmatic contour, with prolapse or eversion of the bowel with the herniation greater with the patient lying prone than when the patient is standing. Signs which are present as well in congenital hernia.

In the gas-containing type of subdiaphragmatic abscess, without complications above the diaphragm, the diaphragm on the affected side will be found higher than normal, its contour regular, the costophrenic sulcus clear, the lung fields clear, but in addition beneath the diaphragm, will be found a semi-circular area or clear space. On the photographic film, it will appear as a half-circle of darkness; on the fluorescent screen, as a half-circle of brightness, which means an area easily penetrated by the X-rays. The horizontal axis of the half-circle defines the fluid level, the clear space above corresponding to the area occupied by air. That one is dealing with a fluid level may be demonstrated by the photographic method as well as by the screen, by examining the patient erect and in the lateral position. Succession under fluoroscopic observation will dramatically visualize the change in fluid level. If the patient is examined prone, this diagnostic point may be entirely obliterated. Patients even too ill to be examined in the erect position are seldom so invalidated that they may not be turned on their well side,⁷ and an examination made by horizontal rays to demonstrate a fluid level which otherwise might be missed.

The most common complication of subdiaphragmatic abscess is pleurisy with effusion, usually seen in the gas abscess type because by the time there has been decomposition of the abscess cavity products there has usually been a pleural transudate. In very protracted untreated cases, there may be rupture of the abscess into the peri-cardial sac or general peritoneal cavity.

In simple pleural effusion as seen by X-rays, the diaphragm is low, not elevated. It is flattened, not dome shaped. The costophrenic sulcus is not clear or is entirely obliterated. There is also a crowding of the heart and the mediastinal contents to the opposite side of the effusion.

Liver abscess, uncomplicated by subphrenic abscess, is accompanied by a moderately high diaphragm, whose movement is restricted. I have seen one case of Banti's Disease with high left diaphragm, quite immobile, but with physical signs and clinical picture, the etiology of the elevated diaphragm was clear. New growth and gummata of the liver usually only affect a segment of the diaphragm. Pneumoperitoneum as developed by Stewart⁸ may be of distinct value in aiding differential diagnosis, but is not to be recommended in any acute suppurative lesion. A case thought to be new growth, by pneumoperitoneum was proved to be a localized hernia of the right leaf of the diaphragm.

If there exists any suspicion of subphrenic abscess, an exploratory puncture may be made under fluoroscopic control, as suggested by Sommer, although Fiffeld and Love believe this

diagnostic procedure should be employed only in the operating room.

Sommer⁹ suggests making the gas-free abscess gas-containing by withdrawal of 30 cc. of fluid and the injection of the same quantity of air. In the complicated case, punctures at different levels are advised. If different kinds of puncture fluid are obtained at different levels, the diagnosis is rather certain.

Phrenic paralysis, neuritis and polyomyelitis may give one a high diaphragm due to paralysis of the muscles in expiration. There should be no difficulty about differentiating the high diaphragm due to tumor of the lungs, mediastinitis and tuberculosis.

If the history and clinical picture are correlated with a carefully made Roentgen examination, there is little reason why the diagnosis of subdiaphragmatic abscess should not be made

with greater frequency and reliability than in the past and thus prevent procrastination in the application of proper surgical measures.

REFERENCES

- 1 Pancoast, Henry K., M.D.: "The Roentgenological Diagnosis of Liver Abscess." *Am. Jour. of Roent. and Ra. Therapy*, Vol. XVI, Oct., 1926, No. 4, p. 303.
- 2 Lockwood: "Subdiaphragmatic Abscess." *S., Gyn. and Obs.*, p. 502, Vol. XXXIII, 1921.
- 3 Finfield, Lionel, M.D., and Love, R. J. McNeil, M.D.: "Subphrenic Abscesses." *Brit. Jour. of Surg.*, p. 683, Vol. XIII, 1926.
- 4 Landers, Morris, M.D.: "Diseases of the Chest." 1917, p. 596.
- 5 Boyd: "Surgical Pathology." 1925.
- 6 Weessler and Jacques: "Clinical Roentgenology of Diseases of the Chest." The Southworth Co., 1925.
- 7 LeWald, Leon, M.D.: "Subphrenic Abscesses." *Archives of Surg.*, Vol. X, Jan., 1925.
- 8 Stewart, W. H., M.D., and Stein, A. W., M.D.: "Roentgen Ray Study of the Abdominal Organs Following Oxygen Inflation of the Peritoneal Cavity." *Am. Jour. of Roentgenol.*, Nov., 1919, Vol. VI, pp. 533-541.
- 9 Sommer, J.: "Die Röntgenuntersuchung des Subphrenischen Abszesses zur Feststellung des Operationsplanes." ("The Roentgen-ray Examination of Subphrenic Abscess in Establishing the Plane of Operation.") *Zentralbl. f. chir.*, 1923, L. 215.

ADDRESS DELIVERED AT THE OPENING OF THE NEW OBSTETRICAL AND GYNECOLOGICAL BUILDING, BOSTON CITY HOSPITAL MARCH 4, 1927

BY REUBEN PETERSON, M.D., F.A.C.S.

ALLOW me to express my great appreciation of the invitation to address you on this occasion, the formal opening of this magnificent building for the care of obstetrical and gynecological patients. Not only do I thank you for the honor conferred upon me, but also because it enables me to acknowledge publicly the great debt I owe this institution for opportunities given me nearly forty years ago, during the formative period of my life, when I served the hospital as a medical house officer.

Therefore, I trust any personal note in what I am about to say will be excused and taken as a sincere tribute from a former house officer, even after this lapse of time, grateful for many acts of kindness and generosity received at the hands of his former Chiefs.

Opportunities there were in plenty to study and profit by diseases strictly medical as compared with surgical disease on the other side of the hospital from where I worked. Although the surgical services were more popular, I have never been thankful enough that I secured a medical service since it so happened my professional life was to be worked out largely on surgical lines and the training in internal medicine I received in the Boston City Hospital has been of inestimable value to me.

I remember the hours I spent with the typhoids, palpating and percussing enlarged spleens and watching the action of hearts as the disease progressed. Speaking of hearts, I thought I was quite an authority on cardiac disease until some years ago I learned that heart murmurs in reality mean very little, in short that the science of cardiology has shown this and that. The gist of the matter was that I did not know much

about the heart, in spite of my abundant opportunities as an intern.

How vividly I remember the alcoholics with and without D. T.'s. This knowledge stood me in good stead some ten years later when a surgical friend of mine asked me to see in consultation a woman of about forty, a member of one of the best families, upon whom he had just operated. To make a somewhat long and tragic story short, I no sooner saw this lady than the peculiar actions of divers individuals who used to occupy beds in Ward L flashed through my mind, and I made a diagnosis of alcoholism, and such it proved to be, for in spite of the best family surroundings, she had been a secret drinker.

Shall I ever forget the little man in one of the private rooms? He was everything objectionable from a house officer's standpoint, irritable, fault-finding and continually calling us out at night after we had put in a very hard laborious day. Our diagnosis was hypochondriasis, neurasthenia, in plain language "crankiness." He had many complaints, poor fellow, but we paid small heed to them for had we not made the diagnosis; and then one night he died suddenly. Of what, we asked one another at the breakfast table, but we all went to the autopsy in spite of misgivings, and that man had a tumor of the brain as big as a billiard ball. That was a great and lasting lesson to me. In puzzling cases, where nothing pathological can be definitely found and hypochondriasis seems to be the only possible diagnosis, I think of that man and the tumor and I examine my patient again. To paraphrase Kipling "I learned about women from him."

Just another illustration to show that what

one learns on a hospital intern service may prove of the utmost value years later. Twenty-five years after I was medical house officer, among my other duties I had the executive office of Medical Director of the University of Michigan Hospital thrust upon me. I had to plan a contagious hospital where patients with various contagious diseases had to be under one roof. At Providence, Rhode Island, I saw a hospital of this kind in operation on the theory that contagion is not air borne, but is carried by contact. Then the question which had been puzzling me for a quarter of a century was answered. In the old B. C. H. days, we medical house officers going from diphtheria, scarlet fever and measles, did one thing thoroughly after examining a patient with one contagious disease and then might be immediately summoned to see and examine a second patient with an entirely different communicable disease. We washed our hands thoroughly, and if I remember correctly, soaked them in bichloride, and there were few cross infections. That settled it. I returned to Michigan convinced and proceeded to convince others. The hospital was erected on the plan advocated at the Providence Hospital and there have been practically no cross infections.

This wonderful building with accommodations for one hundred and thirty obstetrical and gynecological patients, is a far cry from the old Ward S I worked in years ago. Even in those days it was a mixed ward, although strange to say I can remember but two obstetrical cases. One was a case of eclampsia in a woman with her first pregnancy. I can see Dr. Lyman now as he worked to dilate the uterus, so that he could do version and deliver the woman. He seemed to me such an old man, weak and feeble, and I was not surprised when his hands and arms became numb from his exertions and—mirabile dictu—he asked me to take his place. This is one of those stories which should relate how a strong young man demonstrated his superior strength and skill. Alas, it was not thus. My strong young hands became numb likewise, and Dr. Lyman completed the delivery.

The other obstetrical case I remember was a woman who had her baby when all the house officers had gone, by permission, down town to have our group photograph taken and Dr. Rowe had to officiate. To show us that he was more than an executive officer he told us proudly upon our return how he had washed out the uterus in a perfectly normal case with a strong solution of bichloride. Yet the patient made a good recovery, which proved his treatment to be correct.

And now comes this new building, erected as a part of a large general hospital, to be devoted to obstetrics and gynecology. I think you will note how these two words are arranged and that the word "Obstetrics" is placed first as it always should be in speaking of the two divisions of this specialty. That they should be linked to-

gether, and that the work in this building should be both obstetrics and gynecology, demonstrates great wisdom on the part of the governing body of the hospital, its staff, or individual staff members. For, it must be known to you, that all hospitals have not so successfully survived the strife and turmoil of the past thirty-five years in this regard. Even now many otherwise fine hospitals are seriously handicapped in that gynecology has been made a subdivision of surgery on the ground that after all it is a surgical specialty and consequently should be subordinate to general surgery.

If this statement were true, if that were all there is to gynecology, the latter might well be joined to surgery and no harm done. However, the premises are absolutely incorrect for time is rapidly demonstrating that gynecologists, if they are to be more than carpenters in a special field, must have knowledge and profound knowledge of the mental and physical attributes of women as distinct from men. In the necessity for such a study, surgery in this special field will find its proper place and not be over-emphasized.

In the late eighties the good results of antiseptic surgery were becoming generally recognized, to be followed by the aseptic surgery of the next decade. The medical students of today accept such as natural, and do not know except in a general way out of what present day surgery developed. My students can hardly realize that my experience goes back to another hospital in this city, where to be sure the abdominal wound was not sprayed with carbolic solution, but where the air was carbolyzed prior to each abdominal operation. In 1890 when I performed my first supravaginal hysterectomy for fibroid, I did not dare, in the face of surgical opinion in the city in which it was performed, to ligate and drop the stump but treated it, projecting from the lower part of the incision until it sloughed away.

It is not to be wondered at, that gynecologists in the decade from 1890 to 1900 were carried away by surgical zeal. Every spare moment of their time was devoted to perfecting the technique of pelvic and abdominal surgery. They were pioneers in their special field of surgery and did their work well. Most of these men had been well grounded in obstetrics, in the physiology and pathology of parturition. They were practical obstetricians and most of them were well fitted by training, study and natural ability to devote themselves to this special field of gynecological surgery.

However, there were only so many hours in the day and these were filled with an endless number of operations. Something had to be eliminated and naturally it was obstetrics with its fatiguing night work. Yet, as I have said, these men were well grounded in obstetrics as

exemplified in their plastic work and in their discussions in the national medical Societies. The injury came to those who served under them in the great gynecological clinics divorced from obstetrics. Their young assistants had a one-sided training. In some of the clinics attached to great medical schools the anomalous situation could be seen of men highly trained in gynecological surgery who not only knew practically nothing about obstetrics, but boasted of the fact. The obstetrical departments were handicapped since their personnel was not allowed to perform gynecological operations. The young men trained in such departments were deficient in surgical dexterity in pelvic surgery and showed it when they left the hospitals. The glamor of surgery caught the brightest young men and engulfed them in the service which apparently offered the greatest field of advancement.

Thus the vicious circle was complete. Gynecologists without obstetrical training, good artisans but endeavoring to restore parts of the female generative tract to their normal shape and condition when they did not know the underlying obstetrical causes which had brought about these conditions. On the other hand were obstetricians thoroughly familiar with the underlying causes of obstetrical failures, yet from lack of clinical opportunities and training forever handicapped in their attempts to acquire surgical skill and dexterity. Even today we see the disadvantages of the separation of obstetrics and gynecology in medical schools and large hospitals with an abundance of clinical material. We see finely trained obstetricians of national and international reputations sending their assistants to other clinics for training in gynecological surgery. If this be not done, the graduates from such obstetrical departments, in spite of their ability along obstetrical lines, theoretical and practical, must call to their aid specially trained gynecological surgeons, if they are elected to chairs where obstetrics and gynecology are combined.

Under these conditions it was little wonder that general surgery seized its chance in many schools and hospitals, and annexed gynecology on the ground it was a surgical specialty. United, obstetrics and gynecology could have defied the world, separated they have, from a teaching and scientific viewpoint, had a hard time.

Thus I rejoice in the union I seem to see between the two divisions of this specialty in this hospital. May such a union long exist, for from it comes strength, and only weakness when the tie is broken.

A great responsibility rests upon those who are to determine the policy and prescribe the rules under which this and similar obstetrical and gynecological departments are to be administered. However, their efforts should be crowned with success, if a few cardinal principles be kept in mind.

First of all, there should be a Chief of such a department, a trained obstetrician and gynecologist, whose service should be continuous. Such a man need not work all the time, for he should be allowed to delegate his work as seems most advantageous to the department. Yet at all times he is to be responsible to the governing body of the institution, the trustees, for the administration of the department. Such a system is productive of the best results in medicine and surgery, as in the business world. If a plant is established or even before its establishment, a superintendent, a manager is secured. The directors or officers of the Company look to him for the management of the plant. He is made responsible for the extent and quality of the output. He must be familiar with all the details of his plant, must plan and execute, note where the quality of the product is deteriorating and make the necessary changes, subject to the endorsement of his Board of Directors, whereby improvement will take place.

If this be true in the business world and I think you will grant it to be the case, why should it not be true in the management of a department in a hospital? It is true as can be demonstrated if we look into the most successful departments in hospitals in this country and elsewhere. That is why a continuous service for the head of such a department is absolutely necessary. At all times he is carrying the burden, even when he is on vacation or not actually doing the routine departmental work.

How would this fit in with medical school affiliations for the particular department we are interested in today? Fortunately, in discussing the question of the best system for a department of obstetrics and gynecology, I do not know definitely about the relations between the medical schools of this city and this department or other departments of the hospital. This I do know, however, and that is if I were a member of the governing body of this hospital, I would feel it my duty to so administer this unit that the greatest good should accrue to the patients who are treated here, for after all, this building was erected with this idea foremost in mind. I should use my influence to so arrange matters that the members of the staff who care for the patients should have every opportunity for development along obstetrical and gynecological lines. Then, because I believe that where teaching is carried on the patients are better cared for than where no such teaching exists, I would be most pleased to see an affiliation with a medical school, provided appointments did not interfere with the general plan which had been worked out for the best management of the department.

For instance, I would not have two heads to the department, no matter what the medical school might say. The latter could not dictate that this man could teach obstetrics and that man gynecology, if through titles the fundamental principle of departmental unity of obstetrics

and gynecology were liable to be interfered with. In short, the departmental machinery should be so arranged, that the members of the staff should have the greatest opportunities for development in their special field, so that they may become leaders among those similarly engaged. A department so organized and maintained would be on an independent basis. It would not be controlled by medical school politics. It would be doing its own job in its own way, only influenced by what was to be to the advantage of the department in its care of patients and in its scientific work. Far better no medical teaching than dictation or compromises which would be detrimental to departmental efficiency.

Departmental services should be arranged in accordance with the policy outlined above. Through the different grades of the service from the lowest to the highest, the staff members should be trained in and be as perfectly familiar with one division of the departmental work as another. The obstetrical side should receive as much consideration as the gynecological. Outside the hospital, a staff member could choose his own line of work as his inclination might lead him. Within the department he should do what is assigned him, if the best interests of the department are thereby enhanced.

Services for the house staff should be made attractive, so that the brightest of the medical graduates would apply for them. Opportunities should be given for post graduate work beyond the usual year or year and a half intern period. In a unit as large as this, which is bound to grow as the city and hospital increase in size, there will be clinical material for ample post graduate training in obstetrics and gynecology for those who desire to specialize. Such men would have to be paid, so as to be free from financial worry but public or private funds can always be found for such a purpose, if the need be once recognized. Many thus trained would settle elsewhere but enough would remain in Boston to keep the departmental staff supplied with the best of new blood.

It must never be forgotten that if we are to progress we must ever offer greater and greater opportunities to the young men who are to be the leaders of the future. The younger generation may or may not make the most of their opportunities but it is our privilege to provide every facility and opportunity for the advancement of medicine and surgery. Then we have done our duty and are not to be blamed if medicine does not progress as much in the next fifty years as it has in the past.

I have endeavored to cover a large subject in a short time. Never have I been so interested to see a department of obstetrics and gynecology utilize to the utmost its splendid opportunities along lines I am convinced are fundamentally sound. Under the right guidance, pursuing the

right policy, this department of obstetrics and gynecology in a hospital we graduates have a sincere affection for, will be second to none in the country. It will help to keep up the good fight until obstetrical failures will be things of the past and reparative gynecological surgery reduced to a minimum.

THE COLOR SCHEME OF OPERATING ROOMS

COLOR as an aid to surgery has been given additional recognition as the result of research work conducted by Dr. P. J. Flagg, of New York City.

In his efforts to determine the color scheme which was most suitable to the operating room in order to provide the necessary illumination, Dr. Flagg, through the use of the Munsell system of color notation, established the fact that a peculiar bluishgreen is the scientifically correct complement to blood when exposed to air, which gives the required intensity of color in a room where subdued illumination is important to prevent glare, thereby protecting the eyes of the surgeon.

The new color, or shade, is designated as "eye-rest green." Dr. Flagg advocates the use of deep eyerest green on the floor under the operating table and a shading to a lighter tone as the walls are approached, with the walls fading into a deep cream up to and including the ceiling. Also, it is the opinion of Dr. Flagg that the table, gowns, toweling and draperies used should be of the deepest tint of eyerest green.

Study of the proper color scheme for the operating room, with various recommendations, has been made by Dr. H. M. Sherman, of California; Dr. Alexis Carrel, of the Rockefeller Foundation; Dr. Corwin, of Colorado; Dr. Virchow and Dr. Kroenig, of Germany, and others. Dr. Flagg's findings are the latest contribution to the subject and have met with considerable favor in professional circles.—*Bulletin of the Du Pont Co.*

NEW MOSQUITO POISON

E. ROWBAUD, of the Pasteur Institute in Paris, according to *Science*, has recently announced that a formaldehyde compound is superior to anything previously used in the fight against mosquitoes. The United States Bureau of Entomology is now preparing to make tests with this compound, which would be valuable in this country in the attempt to control mosquito breeding over large areas of salt marshes.

This preparation, which is in the form of an extremely light dust, is said to be non-poisonous to warm-blooded animals, fishes and aquatic plants. Being readily driven by the wind it settles on the surface of the water, bringing about the almost immediate death of mosquito larvae.

**Case Records
of the
Massachusetts General Hospital**

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY R. C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 13131

**DEEP SLOW BREATHING WITH
GENERAL EDEMA**

MEDICAL DEPARTMENT

An unmarried colored housemaid seventeen years old entered January 24 complaining of swelling of the feet and legs of four months' duration and shortness of breath of twenty-four hours' duration. She seemed ignorant and indifferent; the history was considered unreliable.

At the onset the swelling was mild in her feet and ankles toward the end of each day. It had grown slowly but progressively worse. In the morning it was always gone. She sometimes thought that her abdomen was growing large, but was never sure. Since November she had had headache. Twenty-four hours before admission while walking along a level street she became extremely breathless and had uncomfortable "tightness" across her chest. During the day she developed hacking unproductive cough. Her legs were more swollen than usual. She was unable to sleep at all that night. The dyspnea persisted and the tightness of the chest became distressing.

Records of the Out-Patient Department show that at a visit two years before admission for a subacute frontal sinus her blood pressure was 118/90. The pulmonic second sound was accentuated. There was a low systolic murmur at the left sternal border. The heart was not enlarged. The urine was cloudy at one of two examinations, specific gravity 1.018, a large trace of albumin twice, many to occasional red blood corpuscles, some leucocytes, a few to occasional granular casts.

At a visit the day of admission to the wards she said in addition to the history given above that she urinated once in two nights. The blood pressure was 180/134. A systolic murmur was heard all over the precordium. There was a late mitral diastolic, loudest at the apex, accentuated by exertion.

Her father had been an invalid for two or three years, without a diagnosis. Her mother had one miscarriage after the patient was born.

She gave a past history of glands swollen to the size of walnuts and lasting for some time in

her childhood. She had occasional sore throats. She had not menstruated since December 13.

The Out-Patient records show a diagnosis of rickets when she was ten months old. Five years before her admission to the wards she had sore tongue for a month, and came to the Throat Room with the tongue ulcerated and foul smelling, the gums inflamed and the throat red. Diagnosis was deferred.

Clinical examination showed a rather heavy girl with puffy face and eyelids, breathing rapidly and with difficulty. The lungs showed fine crackling râles on the right extending to the apex and a few râles at the left base. There was flatness merging into dullness at the right base to the angle of the scapula. The apex impulse of the heart was felt 9 centimeters from midsternum, 2 centimeters outside the mid-clavicular line. There was no other enlargement to percussion. The action was rapid. The sounds were of good quality. No murmurs were heard. There was apparently a gallop rhythm at the apex. The blood pressure at entrance was 210/140. The abdomen was held stiff. Nothing could be felt, though the right hypochondrium was dull to percussion and resistant to palpation. Rectal and pelvic examinations were negative. The introitus admitted one finger. There was pitting edema of both lower legs. The pupils were normal. The knee-jerks were absent.

The amount of urine is not recorded. Urine cloudy, a large trace of albumin at the single examination, occasional granular casts and red blood cells, many leucocytes. Blood: 32,600 to 44,000 leucocytes, (both counts January 25,) 84 per cent. polynuclears, hemoglobin 90 to 75 per cent., reds 3,648,000 to 3,280,000, smear normal. Wassermann negative. Non-protein nitrogen 64 milligrams. Stool, guaiac positive, no macroscopic blood.

Temperature 98° to 99.8°, pulse 90 to 103, respirations normal.

Orders. January 24. Karell diet. Digitalis six grains. Codeia half a grain by mouth every three hours p.r.n. January 25. Codeia half a grain. Morphia one-sixth grain s.c. every three hours p.r.n. Digifolin six grains intramuscularly at 3 and 6 p.m., three grains at 10 p.m. Magnesium sulphate one ounce by mouth daily. Cracked ice p.r.n. Caffein five grains s.c. at 5.30 and 6.30, the second time with morphia one-sixth grain. Later, caffein five grains every two hours.

The morning after admission the patient was moderately dyspneic, with deep labored respiration. There were scattered moist râles at both bases. The blood pressure was 180/120. She had not voided. She did not seem very cyanotic, though it was hard to be certain of this. At noon because of her stuporous condition, the increasing moisture in the chest and the falling peripheral blood pressure (140/100), venesection

tion was decided upon, in spite of the anemia. It was attempted but failed except for an ounce and a half. An hour later both bases were full of râles extending high up into the hilus region, where the heart sounds, which were faint, were obscured by moisture. Venesection was again resorted to and 550 cubic centimeters of blood removed. The pressure increased from 90/60 to 130/90. Later it was 125/85. The râles in the chest cleared up remarkably. The patient roused, then lapsed into quiet, deep, rather slow breathing. Oxygen was administered by nasal catheter. The breathing gradually became slower, shallower and more quiet. The patient died so quietly that her friends did not realize that she had stopped breathing.

DISCUSSION

BY RICHARD C. CABOT, M.D.

NOTES ON THE HISTORY

All the symptoms of the present illness certainly point toward a cardiac trouble.

They studied her urine fairly carefully in the Out-Patient Department. They were undoubtedly thinking of nephritis, but I do not see how they could have distinguished it from passive congestion; I do not know of course to what conclusion they came.

As we read along we find that a great deal more evidence has come in. The two important facts which we did not have at the outset are the high blood pressure and the mitral diastolic murmur, and as those appear to have gone I think we may assume they were not important, unless they were something started up by infection in the month.

In the Out-Patient Department, diagnosis was deferred. They probably thought there was not enough in the mouth to account for the other features, and wanted further study of the heart and kidneys as possible background for what they saw in the mouth.

NOTES ON THE PHYSICAL EXAMINATION

The puffy face is a new point.

"No murmurs were heard." That is interesting in view of all that were heard before.

"Nothing could be felt, though the right hypochondrium was dull to percussion and resistant to palpation." Probably what?

A STUDENT: The liver.

DR. CABOT: Yes, presumably the liver. One is surprised that they did not say anything about tenderness, because the liver in passive congestion shows tenderness when the other types of enlarged liver do not.

The knee-jerks were absent. But I suppose in her condition one does not have to pay much attention to that.

The amount of urine is not recorded. She must have been here a very short time. We

should like to know what the specific gravity was.

MISS PAINTER: It is not recorded.

DR. CABOT: That means they got only a very small specimen, perhaps too small for testing the specific gravity. We cannot say that we have sufficient study of this urine to tell us much about the kidney.

"32,600 to 44,000 leucocytes, 84 per cent. polynuclears." We must look for some acute infection, presumably, to explain that.

One would expect the non-protein nitrogen to be higher, but it is certainly high.

The temperature is rather surprising in view of the high leucocyte count.

The orders are all for cardiac medicaments.

Venesection was attempted but failed except for an ounce and a half. That often is so in cardiac disease. The circulation is so sluggish that you cannot get blood.

DIFFERENTIAL DIAGNOSIS

The only discussable question it seems to me is the relation between the heart and the kidney in this case in which presumably one or both are involved. Aside from the suggestion of a terminal infection given in that high leucocyte count I do not see anything abnormal but the absent knee-jerks, and as there is nothing else pointing to the nervous system except that, I should say we ought to disregard them.

We have very insufficient record of the urine, but we have one fact, namely that they did not get any. She did not void. They did not catheterize her. Probably there was not much urine secreted.

We have an anemia of the type that you get with simple hypertension. We have a rather high non-protein nitrogen, although not extremely high. We have a deep and slow breathing, the type often coming from acidosis, either in nephritis or in diabetes, and not seen, so far as I know, in pure cardiac trouble. So it seems to me on the whole that the balance goes over to the side of nephritis, with a cardiac hypertrophy and a hypertension. I do not believe anything in particular will be found in the heart beyond hypertrophy and dilatation. We have a diastolic murmur, but not at the end. It is possible of course that they have missed something there. But I do not think we have evidence enough to make us think of any primary cardiac lesion.

A STUDENT: Is it not possible that she has hypertension associated with a chronic nephritis?

DR. CABOT: She is seventeen years old. Primary hypertension not associated with nephritis is rare at that age. I have never seen it. I think we can throw it out. We still believe she has nephritis; now what type? It is obviously chronic, certainly not acute. We have said about all we can say on the facts given us. At

this age chronic glomerulonephritis is commoner than any other kind. Sore throat should go with that, but there is nothing to show that she had more sore throats than the much larger remainder of persons who do not have nephritis. I take it that that ulceration of her tongue seen in the Out-Patient Department was one of those states of lowered resistance parallel to the terminal infection that we so often see in a chronic nephritis. Have we anything to say as to what terminal infection is likely to be found? I do not see that we have on the grounds of physical signs. No physical signs point to anything in particular. The two commonest of this disease are what?

A STUDENT: Pneumonia and acute pericarditis.

A STUDENT: She had lung signs, Dr. Cabot. Wouldn't you interpret them as fluid?

DR. CABOT: I was interpreting them as passive congestion and hydrothorax. I do not see anything that points distinctly to pneumonia. I would not say that she has not got it, but I think we have no physical signs of it and we have to go on dead reckoning, so to speak, because we have no means of making direct observation.

A STUDENT: I should like to know why they performed this venesection.

DR. CABOT: The heart was giving out. I suppose the right heart was very distended. The low peripheral blood pressure is dependent on cardiac weakness, and if we can take enough blood out to drain the right heart the heart can get a grip on itself, can return the blood and go on better. I have not seen venesection done enough times in cardiac cases to have any particular impressions about its value.

A STUDENT: Would pyelitis account for the leucocytosis?

DR. CABOT: Yes; but have we any evidence of pyelitis?

A STUDENT: There are many leucocytes in the urine.

DR. CABOT: Well, that isn't very many, you know! That does not mean pus as in pyelitis; I should not say "many leucocytes" is evidence enough for pyelitis. I had not thought of it. I do not see any reason why we should think of it.

A STUDENT: Dr. Cabot, that sore tongue was five years ago.

DR. CABOT: Was it? I did not get that. Then I'd better take back what I said. I do not know why she had it.

A STUDENT: How about the occurrence of chronic nephritis at this age?

DR. CABOT: It is not uncommon. It is not so common as it used to be, I think. My impression is that we used to see more cases like this when I was a house officer here. I attribute that improvement to the cleaning up of so many tonsillar infections. Of course it is not so common as in older people, but it is not rare at all.

A STUDENT: Were the eye-grounds done?

DR. CABOT: Apparently not.

MISS PAINTER: They intended to do them, but they did not record the examination.

DR. CABOT: I think she died of uremia rather than cardiac failure. She had some, but not enough I should say.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Chronic nephritis.

Hypertensive heart disease.

Myocardial failure, congestive?

Pneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Chronic nephritis, probably glomerulonephritis.

Hypertrophy and dilatation of the heart.

Terminal infection.

Uremia.

ANATOMICAL DIAGNOSIS

1. Primary fatal lesion

Chronic glomerulonephritis (capsular type).

2. Secondary or terminal lesions

Hypertrophy of the heart.

Bronchopneumonia (very early).

Chronic passive congestion of the spleen.

DR. TRACY B. MALLORY: The patient had a chronic nephritis which seemed to be the chief cause of death. The combined weight of the kidneys was 250 grams. The capsules stripped fairly readily, leaving a very pale yellowish gray surface which was finely granular. Numerous little yellow opaque dots averaging half a millimeter in size could be made out on the surface. The cortex was shrunken to the average of about two millimeters, rather less than half of the normal thickness. The pyramids in contrast were dark reddish brown. Microscopic examination of the kidneys showed a typical chronic glomerulonephritis of the so-called capsular or proliferative type, with increase in the number of cells in Bowman's capsule to layers sometimes two, three, five or seven cells deep, that gradually encroach upon the capsule space, form adhesions to the glomerular tuft, and eventually destroy the glomerular tuft entirely.

She had slight cardiac hypertrophy. The heart weighed 325 grams. I think that probably is a slight hypertrophy, but not very much. The valves were entirely normal except for a slight sclerotic patch on one of the mitral flaps, but I do not believe it could possibly have been the cause of symptoms or murmurs. It was a very small thing.

The liver weighed 1500 grams. That is perhaps a little large for a girl of her age. It was slightly cloudy, brown in color. The centers of

the lobules were very slightly congested. It was not however the liver of longstanding chronic passive congestion.

The lungs showed a very acute edema throughout all lobes, which perhaps masked finer changes, for no pneumonia was made out in gross. Histologic examination showed, however, an extremely early bronchopneumonia. Culture from the heart's blood was negative.

CASE 13132

A CARDIAC CASE WITH UNUSUAL PHYSICAL AND X-RAY FINDINGS

MEDICAL DEPARTMENT

An Italian laborer sixty-two years old entered January 11 complaining of epigastric pain of ten years' duration. He spoke no English. Because of his condition and the language difficulty only a brief history was taken.

Five years before admission he was in a hospital several weeks with an attack similar to the present one. He recovered apparently completely and was able to do heavy labor until ten days before admission. Then he developed a "cold" and became hoarse. On the same day there developed acute knife-like epigastric pain radiating through to the back and up through the shoulders—not down to the arms—and lasting about ten minutes. Since that time he had had four or five similar attacks daily. Exertion tended to precipitate them. White pills which he dissolved in water relieved them. Since their onset he had been markedly and increasingly dyspneic on exertion and quite orthopneic. He had gradually lost his voice, so that now he could not speak above a whisper. Since the onset he had stayed at home, making no exertion but not staying in bed.

His physician gave the past history. The patient had pneumonia thirty-five years ago. Five years ago he had been kept from work for three weeks by attacks of pain in the knee joints accompanied by slight fever. December 23, the physician said, the present illness began with pain in the knee joints, slight dyspnea, and productive cough which caused pain in the pit of the stomach and beneath the shoulder blades.

Clinical examination showed an obese, dyspneic and orthopneic man in no apparent pain. Almost complete aphonia. Skin and mucous membranes cyanotic. Teeth poor. Very marked pyorrhea. Chest expansion limited. In both chests front and back there were squeaks, groans and coarse râles. Apex impulse of the heart not found. Heart enlarged. Left border of dullness 11 centimeters from midsternum, 3 centimeters outside the midclavicular line. Right border not recorded. Supracardiac dullness 5 centimeters? Systolic murmur heard best at the apex with reduplicated second sound or a dias-

stolic murmur. At the tricuspid area there was a pounding second sound and a harsh murmur (rub?). Over the pulmonic area and below there was an early diastolic murmur heard better than at the aortic area. Occasional extrasystole. Precordium prominent. Left blood pressure 150/80, right 160/85. The left pulse seemed to come through a little sooner than the right. Electrocardiogram January 13: normal rhythm, rate 85, slight left axis deviation and slightly inverted T₂. January 18: normal rhythm, rate 95, P-R interval 0.2 seconds, diphasic T₂, slight left axis deviation as before. Palpation of abdomen difficult. No fluid found. Extremities, very slight edema of the legs. The left pupil was greater than the right, both regular and reacted normally. The knee-jerks were not obtained.

The amount of urine was 81 to 22 ounces, specific gravity 1.010 to 1.015, cloudy at three of four examinations, a very slight trace to a large trace of albumin at all. Fixation test, specific gravity unvarying at 1.010, large trace of albumin in all six specimens. Sediment blood tinged at the last of the fixation test series, loaded with red blood cells, guaiac very strongly positive, many leucocytes. Three of four other sediment examinations showed 2 to 60 red cells per field, 5 to 12 leucocytes twice. Renal function January 11 off color, January 12 two minutes late, off color, about 30 per cent., January 17 on time, function zero. Blood: 12,100 to 23,100 leucocytes, polynuclears 88 per cent., hemoglobin 75 to 80 per cent., reds 4,950,000 to 4,500,000, smear normal at entrance. January 25 reticulated cells 0.5 per cent. Non-protein nitrogen January 11 82 milligrams January 24 165 and 188 milligrams. Wassermann negative.

X-ray January 12 showed the heart shadow very much enlarged. Increased distance to the right of the midline was nearly equal to the distance to the left (See Figure 1.) The outline

of the various chambers was rather indistinct. Slight increase in supracardiac dullness. The pulsation of the various chambers could be made out. No definite change in respiratory motion. Some general haziness throughout the lung fields. Costophrenic sinus clear. The diaphragm was sharply outlined.

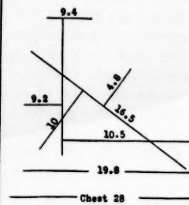


FIGURE 1. Measurements by X-ray January 12.

Temperature 98.2° to 101.1°. Pulse 65 to 100. Respirations 19 to 37.

Orders. January 11. Absolute rest in bed. Fluids limited to 2000 cubic centimeters. Nitroglycerin 1/100 grain p.r.n. for pain in chest.

Morphia 1/6 grain s.c. Repeat once if necessary. January 13, 14 and 15 luminal grains 1½. January 14 and almost daily afterward morphia in 1/4 to 1/6 grain doses once a day to every six hours. January 16 adrenalin ten minims. January 18 the same, and every hour

struction, with more effort on expiration than on inspiration. The patient coughed once, an unproductive hard cough. Very short systolic and diastolic murmurs were heard at the aortic area and at the third left interspace. The supracardiac dullness was found to be 8.5 centimeters,



Taken January 12. Shows the heart very much enlarged. Increased distance to the right of the midline was nearly equal to the distance on the left. (See Figure 1.) The outlines of the various chambers were rather indistinct. Slight increase in supracardiac dullness.

for five doses. January 20 turpentine stupes if soap suds enema does not relieve distension. Rectal tube p.r.n. January 23, 24 and 25 digitalis 4½ grains every four hours unless toxic.

January 12 examination showed the left blood pressure 150/80, the right 160/85. The left pulse seemed to come through a little sooner than the right. Cyanosis was marked. The dyspnea was the type seen in mechanical ob-

struction, with more effort on expiration than on inspiration. The patient coughed once, an unproductive hard cough. Very short systolic and diastolic murmurs were heard at the aortic area and at the third left interspace. The supracardiac dullness was found to be 8.5 centimeters,

The following day the visiting physician found no increased supracardiac dullness, a rough systolic in the second right interspace to the neck and a systolic blow at the apex; sibi-

lant râles, more on the right. January 15 percussion gave the measurements shown in Figure 2. The heart sounds

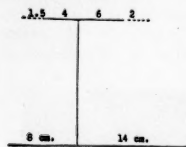


FIGURE 2. Measurements by percussion January 15. The dotted line indicates the difference in the measurements lying flat and sitting up.

everywhere. January 17 the percussion measurements were as shown

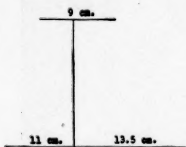


FIGURE 3. Measurements by percussion January 17.

base. The breathing showed marked expiratory stridor, expiration being four times as long as inspiration. The cyanosis was more marked than ever before. Examination of the lungs showed nothing other than the prolonged expiratory wheezing everywhere. Nothing abnormal was made out at the left base posteriorly.

January 17 X-ray showed marked increase in the size of the heart shadow entirely to the right. The shadow now extended further to the right than to the left. There was no evidence of dilatation of the left ventricle or of the left auricle. The supracardiac dullness was increased.

The following opinions were expressed by different men as to pericardial effusion.

January 13. "The lungs show no area in the back suggesting pericardial effusion."

January 15. "This man has *not* got pericardial effusion."

January 15. "It is *possible* that there is a pericardial effusion in the right side of the pericardial sac. I cannot hear any friction."

January 18. "The story, physical examination, X-rays, fever and leucocytosis favor the accumulation of fluid, in the pericardium as a diagnosis rather than extreme cardiac dilatation."

January 18 pericardial paracentesis was done. An electrocardiogram made before it showed normal rhythm, rate 95, P-R interval 0.2 seconds, diphasic T₂, slight left axis deviation as before. Needles were introduced in the fifth left interspace at a point as near as possible to 12.5 centimeters from the midsternal line and in the fourth right costosternal junction. On the

left the needle was introduced until it pulsated with each contraction of the ventricle and then was slowly withdrawn without obtaining any fluid. A second introduction somewhat lateral to the first was made with a similar result. On the right the same procedure was carried out without result. After withdrawal a small bit of clot was blown out of the needle. A lumbar puncture needle with stylet was then introduced until it pulsated. The stylet was withdrawn and suction applied as the needle was gradually withdrawn. At a point perhaps one inch from the heart wall frothy blood was withdrawn, about 5 cubic centimeters in all. This clotted promptly and was no doubt pure blood with perhaps a little novocain. A sample put into a citrate bottle showed 2,500,000 red cells, 15,000 leucocytes. The procedure was done with the patient sitting up in bed in the "orthopneic position." No untoward reaction followed, no change in pulse or in respiratory embarrassment. There was however extreme respiratory difficulty from tracheal compression. It was thought the patient was near death.

January 20 another pericardial paracentesis was done. The needle was introduced into the fourth right interspace at a point designated by one of the cardiologists as being just inside the right border of dullness. Various procedures were resorted to, but no fluid was obtained.

Venesection was then done and 400 to 500 cubic centimeters of blood withdrawn with ease from a vein in the right antecubital space. Before the venesection the pulse was 84, the respiration 30, the blood pressure 150/85, the ratio of inspiration to expiration 1 to 3. After it the pulse was 82, the respiration 33, the blood pressure and ratio of inspiration as before. That day a portable X-ray plate of the chest showed that the heart shadow continued to increase to the right without evidence of change on the left. "After viewing all the plates done I do not believe that the process could be due to dilatation of the auricles."

January 22 the patient's general condition was unchanged. It was thought that the left base posteriorly was duller to percussion than the right. The absence of cyanosis and localized edema were now noted. The blood pressure and pulse remained the same. That night there was fibrillation. Digitalis was started. The next day the pulse was regular all day. There was pitting edema of the extremities.

January 24 electrocardiogram showed sinus arrhythmia and bradycardia with poorly marked P waves; intraventricular block.

January 25 a third pericardial paracentesis was done. A needle was introduced at the angle of the left scapula followed by a tap in the eighth space 5 centimeters to the left of the spine at two points. In neither instance was it felt that the lumbar puncture needle used was of

sufficient length to reach the pericardium. No fluid was obtained. Another electrocardiogram showed marked sinus arrhythmia, rate 70, varying P-R interval,—intra-ventricular block. A not very satisfactory X-ray plate showed the heart still much enlarged.

January 27 the patient died.

DISCUSSION

BY GEORGE W. HOLMES, M.D.

We have apparently a chronic condition in an old man. He has had repeated attacks apparently of this same condition.

I do not know what these white pills were. He had what sounds to me like a heart attack.

"Apex impulse of the heart not found" I think may be explained later.

We should keep in mind the percussion measurements and compare them later with the X-ray measurements. The plate taken January 11 was a portable plate taken in the wards at a rather close distance, showing a tremendously enlarged heart. There is a great deal of magnification here. The heart is not so large as this suggests. They apparently were not able to demonstrate the enlargement to the right by percussion. From this plate one would expect fluid in the pericardium. The equal enlargement on two sides certainly suggests it, but in the fluoroscopic examination fairly good pulsation was made out on the left side. In fact we thought there was pulsation all over the heart. That would be evidence against fluid.

This plate can be compared with the one I have just shown. It is taken at seven-foot distance; we notice the marked difference in the size of the heart. That is probably due to the way the plate was taken and not to any change in the heart in the two day interval.

The signs by X-ray examination of fluid in the pericardium are enlargement of the heart shadow, enlargement to the right more than to the left, so that the distance to the right equals that to the left; a general pulsation over the whole heart shadow, that is, inability to distinguish auricle from ventricle. In very large effusions pulsation may be absent. Another sign of fluid is change of the heart shadow with change in the position of the patient. We were not able to examine this patient in both positions, but we did get a pulsation which was rather general on both sides of the heart. The question from the X-ray point of view at that time was whether the findings were due to fluid in the pericardium or to a tremendously dilated auricle. The good pulsation on the left side of the heart led us to think that they were more likely to be due to a dilated auricle.

This is another plate taken on the 12th, the same day as the first, but taken during quiet breathing. The other was taken at full inspiration. The object in taking a plate in this man-

ner is to bring out the detail of the heart outline. We can see the curves better. This prominent curve might be due to fluid in the pericardium or to a very much dilated auricle.

The plate taken on March 20 shows marked increase in the size of the heart shadow over previous ones, and also that the increase is to the right. If that was due to dilatation it would be rather hard to explain the absence of any increase to the left.

It would be interesting to see where the tap of January 20 would come on this plate. It was in the fourth interspace, which was well down over the shadow, and certainly if they went down in the usual way it must have reached the shadow.

I should like to ask Dr. Cabot to discuss the clinical side of this case.

DR. RICHARD C. CABOT: I have never seen any such plates as these except in pericarditis with effusion. I think he probably has a valvular lesion too. I suppose it is mitral stenosis, but I have never seen any such heart as this without fluid, and in spite of all the dry taps I feel as if it was in there.

DR. FREDERICK T. LORD: I saw this patient during life and at first thought that the condition was due to cardiac dilatation, and later that it was consistent with pericarditis with effusion. The joint pain, fever, leucocytosis, and the X-ray picture are all consistent with pericarditis with effusion, and it seemed to me that the straightness of the line of the left side of the shadow, particularly in that short exposure film, was suggestive of pericardial effusion. Wouldn't you see some indentation at the beginning of the auricle as distinguished from the shadows of the vessels above and the ventricle below if that were the auricle? Isn't that line too straight, and doesn't it merge in too straight a line with the mediastinum?

DR. HOLMES: I think there is a suggestion here. But an indentation there is not a sure finding. On the left the junction between the auricle and ventricle is usually easily distinguishable under fluoroscopic observation unless there is fluid present, and we were able to distinguish it to some extent in this case.

I should like to point out another object of some interest, and that is the presence of the cardiohepatic angle. Clinically I suppose that it was obliterated. X-rays show us that it is not. The interesting thing in the case I will leave until Dr. Mallory gets through. Dr. Cabot, would you hazard any diagnosis on the kidneys?

DR. CABOT: I think he has a chronic nephritis.

DR. LORD: I think so. I think his aphonia and respiratory difficulty are interesting. It suggests perhaps pressure upon his recurrent laryngeal, or pressure on the trachea or great bronchi.

DR. HOLMES: That would make us think of aneurysm.

DR. LORD: I do not see why an enlargement in the cardiac area might not do it.

DR. CABOT: Aphonia comes from pressure of the auricle (supposedly) in mitral stenosis. I have often seen it with this kind of dyspnea.

DR. LORD: I think the dyspnea can be explained by obstruction of the air passages by pressure from without. Bronchostenosis from dilatation of the left auricle has been observed in a number of instances by bronchoscopic examination. With the cardiac area as much enlarged as in this case considerable narrowing of the air passages seems possible, with the resulting embarrassment of respiration.

X-RAY INTERPRETATION JANUARY 17

The appearance is now still more that of fluid in the pericardium.

X-RAY INTERPRETATION JANUARY 20

Encapsulated fluid within the pericardium or mediastinum is the most probable diagnosis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Hypertensive and arteriosclerotic heart disease with congestive failure.
Chronic nephritis.
Pericardial effusion?
Mediastinal tumor?
Auricular fibrillation.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions.*

Rheumatic endocarditis of the aortic, mitral and tricuspid valves. Aortic stenosis and insufficiency.
Sero-fibrinous pericarditis.

2. *Secondary or terminal lesion.*

Hypertrophy of the heart.
Acute intracapillary glomerulonephritis.
Cholelithiasis.
Chronic passive congestion.

DR. MALLORY: There was a pericardial effusion, but not a very large one, estimated at between 200 and 300 cubic centimeters of fluid. Then there were masses of shaggy fibrin, the so-called "bread-and-butter" heart. The pericardium was very much thickened. It was evidently quite a chronic process.

The valves were interesting. The aortic valve showed an extreme degree of calcification and must have been both stenosed and insufficient. The mitral showed calcification and a slight degree of stenosis. The tricuspid also showed a small amount of calcification, but I think probably no interference with function.

The pleural cavities were free from fluid, the lungs negative except for congestion.

The liver was large, with chronic passive congestion. The gall-bladder contained a great many stones, so that it was possible that this

pain radiating to his shoulders might have been due to that rather than to his heart.

The kidneys were very interesting. The combined weight was 510 grams, which is approximately 200 grams more than normal. They were deeply congested and nothing was made out in gross. But in histological examination they showed a perfectly typical, extremely acute intracapillary glomerulonephritis, which in a man of sixty is a very rare phenomenon. And there was no arteriosclerotic nephritis whatever; not a sclerosed glomerulus was found in several sections of his kidney that I looked at.

DR. LORD: Where was the fluid?

DR. MALLORY: In the pericardium.

DR. LORD: More on one side than the other?

DR. MALLORY: More on the right than on the left. The adhesions were much less on the right and posterior portions of the heart than on the left and anterior portion.

DR. CABOT: This peculiar dyspnea was not explained at necropsy?

DR. MALLORY: No.

DR. HOLMES: I think the X-ray picture might be explained by the marked adhesions on the left which prevented the fluid accumulating on that side. There were less marked adhesions on the right, which allowed the fluid to accumulate there. This gave us a heart enlarged to the right and not to the left, and yet due to fluid. It also allowed the pulsations to be carried through on the left. We had only one chamber to study. On the left if the pulsation is direct we ought to see a diastolic and systolic wave. If the pulsation is transmitted we ought to see only a systolic. We were misled here by the fact that the fluid was entirely on the right.

DR. LORD: This patient was tapped unsuccessfully in front, and then the needle was introduced in the region of the angle of the left scapula in the eighth space. What do you think the chances might be of hitting a vessel of sufficient size to be dangerous in the way of bleeding from a puncture in that region?

DR. MALLORY: I should hate to answer that off-hand, Dr. Lord. I would rather think it over a bit. I do not find any evidence of the taps having entered the pericardium. I do not know whether or not Dr. Parkhurst made out anything at the time the specimen was fresh. There is nothing in the record about it.

DR. CABOT: I do not feel very enthusiastic about tapping the pericardium, do you, Dr. Lord?

DR. LORD: No, I do not.

DR. CABOT: I think when I have pericarditis I won't be tapped.

DR. LORD: Of course, however, the favorable outlook without tapping is probably confined to those effusions which are sero-fibrinous and not purulent, and I think that if you have a purulent effusion the risks from it undrained are very considerable, and you are safer to find it out and treat it surgically.

DR. CABOT: What were you going to say about that dyspnea?

DR. LORD: I cannot say any more than I did. I wish Dr. Mallory could.

DR. MALLORY: The extraordinary size of the heart may have had something to do with that. One very rarely sees a heart any bigger than that, seldom as big. That is almost as big as a beef heart. But I have no direct physiological explanation. The aorta is large just at its junction with the heart here, but not at all to the degree of aneurysm.

CHICAGO SOLVES PASTEURIZING PROBLEMS

AN interesting and instructive paper, illuminating on some of the technical difficulties of pasteurization, is to be found in the *American Journal of Public Health* for February, 1927. In this paper George W. Putnam, chief of the Bureau of Dairy Products of the Chicago Health Department, outlines Chicago's program for correction of pasteurization defects.

It is readily agreed by health officials, according to the author, that pasteurization has been the greatest single safeguard in protecting the public from milk-borne diseases. Recently, however, we have come to realize that commercial pasteurization, on which we are so dependent, is in reality a barrier with many defects. The most of these defects are analyzed and the methods explained by which they have been overcome in Chicago by a sanitary engineering program organized by Herman N. Bundegen, M.D., Commissioner of Health.

These defects all depended on the fact that a certain amount of milk is allowed to go through the pasteurizer without being raised to and maintained at the proper temperature for legal and effective pasteurization. Dead ends in pasteurizer holder outlets in which milk may collect and remain unbeaten, leakage through valves, and foam and splash are the chief agencies through which this lack of proper pasteurization is effected. Finally the human element is always on hand to be dealt with—ignorance and carelessness may render useless the most perfect system.

Mr. Putnam summarized the methods of correction of known defects as follows:

1. Dead ends at pasteurizer holder outlets were corrected by flush-type outlet valves.
2. Leakage through valves was corrected by requiring the abandonment of the old-type multiple-valve, the disconnecting of holder inlet and outlet pipes immediately after each use, or the installation of properly designed leak-protection valves.
3. Foam was eliminated, or materially re-

duced, by removing or properly adjusting the unit causing it—usually the clarifier centrifugal type heater, or pump, and by providing a special inlet pipe to accomplish the smooth non-turbulent discharge of the milk into the holder. Splash was eliminated by reducing the speed of the coil in vats.

4. Continuous flow holders not providing proper temperature or holding period have been eliminated; accepting the long distance flow-type holder when properly heated before starting; and requiring careful attention and sounding of all continuous flow units.

5. The troublesome human element was minimized by schooling competent plant inspectors who instruct the operators and make frequent inspection. A school for pasteurization plant operators is being organized.

"HEART HORMONE"

DR. LUDWIG HABERLAUDT, of the University of Innsbruck, according to *Science Service*, has discovered a physiologically powerful hormone, secreted within the living heart muscle and acting to keep it beating ceaselessly. Dr. Haberlandt believes that his extract, easily obtainable from fresh animal hearts, may come to have considerable importance in medicine as a cardiac stimulant.

OCHSNER MEMORIAL LECTURE

THE Chicago Medical Society held a memorial meeting in commemoration of the late Dr. Albert J. Ochsner on February 3. Dr. Walter W. Chipman, Montreal, Canada, spoke on "A Personal Appreciation of Ochsner"; Dr. William J. Mayo, Rochester, Minn., on "Ochsner's Work," and Dr. Allen B. Kanavel, Chicago, on "Surgical Progress." This is the first lecture of the Ochsner Memorial lectures established by the northside branch of the society.—*Science*.

ASSISTANT SURGEON GENERAL

EARLY in February, according to *Science*, President Coolidge sent to the Senate the nomination of Dr. Albert T. Morrison to be assistant surgeon general of the Public Health Service.

UNIVERSITY OF PENNSYLVANIA

Science announces the receipt of a gift by The University of Pennsylvania of \$250,000 from the Carnegie Corporation for the endowment of medical research, and one of \$25,000 from Charles H. Ludington for research work in the Henry Phipps Institute during the current year.

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THE TUBERCULOSIS SITUATION IN BOSTON—A CRITICAL MOMENT

IN 1925, the Boston Tuberculosis Association decided to conduct a survey of the tuberculosis situation in Boston, in order to obtain a clear, comprehensive and unbiased view of the problem and to determine if possible the best methods of attacking it. For this purpose it employed Dr. Murray P. Horwood, Assistant Professor in the Department of Biology and Public Health at the Massachusetts Institute of Technology, who had made similar surveys in many parts of the country, and whose professional qualifications for such work were generally accepted. Early in this work Dr. Horwood submitted a preliminary report which was considered carefully and thoroughly by the representatives of the official and voluntary health agencies in the city. It became apparent early in the discussions of this preliminary report that no agreement could be reached, with the result that after prolonged but vain efforts to obtain harmony and concerted action for improvement of the local situation, which was manifestly bad, the final report was made public.

The majority of the Boston Sanatorium Trustees, the official agency responsible for municipal

pal tuberculosis work in Boston, denied the truth of Dr. Horwood's findings, endeavored to cast doubt on his ability and professional qualifications, and questioned the benevolent intentions of the Boston Tuberculosis Association. The Mayor, not knowing which side to believe, finally decided to call in an outside expert to re-survey the situation. Both sides agreed on Dr. Haven Emerson, Professor of Public Health Administration at Columbia University, New York, as the man best qualified to do this. Dr. Emerson, after a careful study of the situation, recently submitted his report, which has since been published by the Boston Health League. Naturally enough, Dr. Emerson himself made no mention of this controversy nor of the almost complete unanimity of his recommendations with those appearing in Dr. Horwood's earlier report.

A comparison of these reports, however, shows practically complete agreement as regards the essential factors of Boston's tuberculosis problem. Both investigators recommend the appointment of a full-time director of the Tuberculosis Division of the City Department of Health; the chief function of this Division is summarized by Emerson as follows: The chief function of the Division of Tuberculosis will be the provision of adequate services for the discovery, diagnosis and home supervision of tuberculosis in Boston, and such liaison with institutions of the City and State, public and private, as will ensure hospital, or sanatorium or preventorium care for all persons needing it, and continuity of medical and family records of each tuberculous patient."

Both reports emphasize the desirability of securing a man of the highest qualifications as chief of this Division. Both recommend the decentralization of the work of the Boston Sanatorium Out-patient Department by the establishment of clinics in various quarters of the city; both advise changes in the nursing service of the Department. Horwood suggests that four supervisors of nursing, one for each district, shall be appointed; Emerson suggests that the field of nurses of the Boston Sanatorium Department shall be transferred to the general nursing service of the Department of Health. Both agree that the physician of the Boston Sanatorium Out-patient Department who diagnoses tuberculosis in a patient should also advise the patient as to the treatment of his disease. They recommend radical changes in the form of administration of the Boston Sanatorium; Horwood advises doing away with the position of chief of the medical staff, while Emerson states that the present organization is weak and incapable of radical reform, as at present directed. (p. 35.)

These investigators are in accord in suggesting that the Boston Sanatorium be placed under the Trustees of the Boston City Hospital,

and in urging that the man or men who shall be selected to take charge of the Sanatorium should be "physicians of recognized ability, efficiency and experience in tuberculosis." (Horwood—p. 122.) There is further unanimity of opinion in regard to the necessity of adding 100 beds to the Mattapan Hospital, and in regard to various recommendations as to minor improvements in the conduct of the institution.

It is no wonder that, in the face of these doubly authoritative recommendations, Mayor Nichols has decided to urge that they be put into effect, and has succeeded in getting the City Council to act with him. It has been generally recognized that for twenty years the situation in regard to tuberculosis in Boston has been most unsatisfactory. The Board of Health has had no control over the tuberculosis problem, because the handling of this has been delegated to an independent Board of Trustees. Such a system was incapable of producing results. The changes which Mayor Nichols has brought about will give the necessary opportunity to remedy the defects which have existed for so long. The two outstanding improvements are, of course, the placing of the Boston Sanatorium under the Trustees of the City Hospital, and the transfer of the Boston Sanatorium Out-patient Department to the City Department of Health. A great responsibility rests upon these new legatees; upon the Trustees of the Boston City Hospital, to see that Boston's tuberculosis Sanatorium is developed into a first class institution; upon the Municipal Commissioner of Health, to secure as chief of the Division of Tuberculosis the best possible man for the job. This is the time to correct the defects in Boston's scheme of looking after her tuberculous patients; this is the opportunity to build a strong, effective organization for their detection and their care.

BOARDING HOME CARE FOR CHILDREN

THE Children's Bureau of the Department of Labor, in a recently published summary of child-welfare news, calls attention to the fact that slight use is made of boarding-home care in the United States, as compared with institutional care. Six states reported no children cared for in boarding family homes, and in 16 states the amount of boarding family care did not rise above 1 per cent. In ten other states it was below 5 per cent.

The light proportion of boarding-home care in the New England area was in Massachusetts, with 36.5 per cent; in the Middle Atlantic area, New Jersey led with 28.5 per cent; in the East North Central area, Michigan led with 19.4 per cent. Outside these areas the District of Columbia had the largest percentage, 18.3.

A Crippled Children's Bureau has been organized by the New York State Department of

Education as a branch of its Division of Vocational and Extension Education. This Bureau will maintain a complete register of all physically handicapped children except the deaf and the blind, and cooperate with various agencies to provide help for them.

Children, on the whole, are better off in private homes than in institutions, providing the homes are carefully selected and as carefully overseen. In order to accomplish this aim they should be under the supervision of agencies interested in the development of the boarding-home idea.

The value of this method of hospitalization was first brought to light by Chapin of New York, who developed a system of "home hospitals" for sick babies. These homes are grouped and so located geographically that each group is easily accessible for visits from a central office. Infants so cared for did much better than in even the best conducted hospitals, for they were relatively protected from intercurrent infection and received the necessary "mothering" that cannot be expected from a busy hospital nursing staff.

GIFTS TO MEDICINE

OUR institutions of learning and our shrines of science may be always poor, on account of their great needs, but they need not fear bankruptcy while their friends are faithful and ideals of service still remain true.

Science, in proof of this, announces that the campaign conducted by the Johns Hopkins University half-century committee for endowment funds for the university and the hospital, closing December 31, 1926, resulted in total contributions of \$7,022,019 from 3,992 subscriptions; that funds for the further development of the University of Pennsylvania's medical facilities have reached the \$1,235,000 mark towards a total sought of \$3,050,000, and that gifts totaling more than \$365,000 were accepted for the University of Michigan at the February meeting of the Board of Regents. These included \$225,000 to establish a laboratory for research and investigation of cancer and other forms of growth.

THE POST DOES ITS BIT

INVESTIGATORS in the realm of gastroenterology cannot fail to be interested by an announcement in *The Boston Post* for March 14, 1927, (advertising columns) of an explanation for gallstone troubles. In this attractively worded full column notice, Dr. E. E. Paddock, a Kansas City physician, who for 30 years has specialized in the treatment of diseases of the gall bladder, gall ducts and liver, "gives good advice to sufferers from gallstones of the liver."

"Gallstone sufferers," this report states, "especially those whose suffering has about

driven them to an operation, will welcome the joyous news that a large percentage of cases of this painful, health destroying disease may now be successfully treated without surgery."

Dr. Paddock has done more than discover a successful treatment of gallstones by medicine—he has written a booklet telling all about it, and moreover is willing to send this booklet free and postpaid to any who request it. After such an example of generosity one would surely think it incumbent on the *Post* to do its share in freeing the public from its plague of gallstones by announcing Dr. Paddock's discovery free; but no, the announcement is headed "Advertisement." Not only has the good doctor spent thirty years in perfecting his boon to humanity but he must also pay for the privilege of giving it away to the public, and, we dare say, had to pay for the printing of his booklet at full rates.

Newspaper publication costs money, however, and that money must be gained largely from its advertisements. The *Post* must carry on if it is to free the world from gallstone trouble and doubtless feels justified in collecting its tribute even from the gallstone destroyer himself. We have, in our day, known many sufferers from gallstones who would pay handsomely to be freed from them without recourse to the knife, and while we cannot ethically refer them to Dr. Paddock, due to his technical error in the line of advertising, we wish them well in this search—and also wish that their patience might be rewarded.

THIS WEEK'S ISSUE

CONTAINS articles by the following authors:

STEWART, WILLIAM H., M.D. New York University Medical College 1891; Member American Association for Thoracic Surgery, American Gastro-Enterological Association, The American Roentgen Association, New York Roentgen Society, and the American College of Radiology. His subject is: "Some Interesting Observations on the Oral Method of Cholecystography." Page 509. Address: 22 W. 79th Street, New York, N. Y.

O'BRIEN, FREDERICK W., A.B.; M.D. Tufts College Medical School 1911; Visiting Roentgenologist, Boston City Hospital, the Cambridge City Hospital, and the Boston Sanatorium; Associate Professor of Roentgenology, Tufts College Medical School. His subject is: "The Roentgen Ray Diagnosis of Subdiaphragmatic Abscess." Page 518. Address: 465 Commonwealth Avenue, Boston.

PETERSON, REUBEN, M.D. Harvard Medical School 1889; F.A.C.S.; Professor of Obstetrics and Gynecology, University of Michigan Medical School; Obstetrician and Gynecologist in Chief, University Hospital. His subject is: "The Address at the Opening of the New Ob-

stetrical and Gynecological Building of the Boston City Hospital, March 4, 1927." Page 523. Address: University Hospital, Ann Arbor, Michigan.

The Massachusetts Medical Society

THE TREASURER'S REPORT

THE Treasurer of the Massachusetts Medical Society makes the following report regarding the dividend distribution made March 24.

The Council of the Society voted to distribute the sum of \$4000 to the district societies this year. The total number of payments received in time to count for the dividend computation was 3235 making the dividend per each paid member \$1.236476.

The following table gives the number of payments in each district and the dividend.

DIVIDEND FIGURING, MARCH, 1927

Total Reported, 3235

Total, \$4000—Per Member, \$1.236476

District	Number reported	paid	Check
Barnstable	28		\$34.62
Berkshire	95		117.47
Bristol North	54		66.77
Bristol South	181		223.80
Essex North	141		174.34
Essex South	166		205.26
Franklin	30		37.09
Hampden	220		272.02
Hampshire	58		71.72
Middlesex East	81		100.15
Middlesex North	97		119.94
Middlesex South	497		614.53
Norfolk	503		612.95
Norfolk South	70		86.55
Plymouth	75		92.74
Suffolk	565		698.61
Worcester	307		379.60
Worcester North	67		82.84
	3235		\$4000.00
Non-Resident	222		
Total paid		3457	
Total active membership		4204	

The total Massachusetts Membership of the Society is 4032. Deducting the 121 retired members leaves 3911. This shows that 676 members residing in Massachusetts and 69 non residents had not paid at the time this report was made up.

A card has been sent to the delinquents notifying them that their JOURNAL will be immediately discontinued.

A. K. STONE, Treasurer.

LEGISLATIVE NOTES

THE VACCINATION BILL

HOUSE BILL 204 which provides for the compulsory vaccination of pupils in private schools,

an extension of the present law governing vaccination of public school children, was defeated in the Senate by a vote of 25 to 8. The Senate has earned the reputation of being the graveyard of vaccination requirements. This year's record repeats the decision of former years and this in contrast with the approval of the house. Mr. Slater Washburn, of Worcester, is credited with being the important factor in securing the vote in the house.

Senator John E. Thayer was especially active in efforts to secure favorable action in the Senate.

The medical profession in many sections of the state actively supported the bill and tried to teach the doctrine of preventive medicine with respect to this particular measure. The opponents were supported by those who are antagonistic to the aims and purposes of the great majority of the medical profession.

THE CHIROPRACTIC BILL

The Senate Ways and Means has referred this bill to the Senate Council for redrafting.

It is probable that the redraft of this bill will not materially modify its provisions. The subject has been quite generally discussed in the daily press. There is a strong sentiment in the legislature in favor of registering chiropractors, due probably to the misunderstanding of the importance of maintaining a single standard for all who practice medicine.

Chiropractors seem to have little difficulty in evading conviction in courts, using as an argument, that they have employed a certain form of massage. We have often wondered why these practitioners do not wish to operate under the law which provides a license for masseurs.

One of the advocates of chiropractic is quoting Dr. Richard Cabot's statements which refer to errors in diagnosis and he challenges physicians to a joint debate claiming to be able to bring about discomfiture of the medical profession because of the error in diagnosis.

Later information is to the effect that the important changes in the bill provide that chiropractors may not use the title doctor and that the secretary of the Board of Registration in Medicine shall be a member of the chiropractic board and act as its secretary.

RECENT DEATHS

BRALEY—DR. HENRY HUDSON BRALEY, for many years a resident of Concord, died in Newton, March 12, 1927, after a long illness.

Dr. Braley was born in New Bedford, on December 13, 1852, the son of Jasper Warren and Elizabeth (Allen) Braley. He took up the study of medicine about 40 years ago, and pursued the study at the School of Medicine of Boston University, from which he was graduated in 1889. He went to Concord and practiced there for 20 years until ill health two years ago forced him to give up active practice. His home in Concord was at 71 Main Street. He was a member

of the Concord Country Club and American Medical Association.

His wife, who was Louella Smith, died in Concord on June 6, 1925. Surviving Dr. Braley are two daughters, Mrs. Alexander A. Cameron of Concord and Mrs. Frederick A. Dewey of Great Neck, Long Island, and four sisters.

BLAISDELL—DR. ALBERT FRANKLIN BLAISDELL, author of textbooks on physiology for schools and of other books on history, died at the Corey Hill Hospital, Brookline, March 17, 1927, aged 79, after an illness of two months.

Dr. Blaisdell was born in South Hampton, N. H., August 31, 1847, was graduated from Dartmouth in 1869 and received a degree of A.M. from Dartmouth three years later. After teaching for several years, principally in Provincetown and Chatham, he entered Harvard Medical School, from which he was graduated in 1879.

His first textbook, devoted to English and American literature, was published in 1879 and has been continuously in print since. From 1884 to 1902 he wrote a series of five physiologies to be used in the schools, from the primary grades to high school. In more recent years he wrote numerous story books of American and English history for supplementary reading in the grade schools. Including revisions, about 50 textbooks bear his name. He completed the reading of the proof of his last book only a few weeks before his final illness.

He was a member and former president of the Manuscript Club of Boston, the D. K. E. Fraternity, New England Historic-Genealogical Society, William Parkman Lodge of Masons and the First Congregational Church of Winchester, where he made his home.

His wife, who was Mary Atwood Emery of Chatham, died in 1919.

He is survived by a son, Dr. J. Harper Blaisdell, a Fellow of the Massachusetts Medical Society and a member of the Winchester Board of Selectmen; two grandsons; a brother, Dr. George W. Blaisdell of Manchester; and two sisters, Mrs. George W. Tucker of Amesbury and Miss Alice I. Blaisdell of Haverhill.

WOOD—DR. NELSON MERWIN WOOD, physician to the Massachusetts Homeopathic Hospital, Boston, died there, March 13, 1927, at the age of 60.

Dr. Wood was born at Wheelock, Vt., May 12, 1866, and was graduated from Lyndon Institute at Lyndon Center, Vt., later going to Boston University School of Medicine, from which he was graduated in 1893. He then associated himself with the Massachusetts Homeopathic Hospital, and was there for 30 years, for the last two years its chief physician. At the same time he was professor of medicine at the Boston University School of Medicine. Most of his life had been spent in Charlestown, but six years ago he moved to 1768 Beacon Street, Brookline.

On June 15, 1893, Dr. Wood married Bertha E. Harrington of Charlestown. She survives him, as do two daughters.

Dr. Wood was a member of the American Medical Association, the Massachusetts Medical Society, American Institute of Medicine and other bodies; in the Masonic fraternity he belonged to the Henry Price Lodge of Charlestown, Signet Chapter, Coeur de Lion Commandery, Aleppo Temple. He also was a member of the Odd Fellows. For 32 years he had been one of the trustees of the Bunker Hill Boys' Club in Charlestown, and he attended St. Mark's Methodist Church in Brookline.

COBB—DR. ANSON A. COBB, 59, a practicing physician and surgeon in Lewiston-Auburn for 35 years and for many years proprietor of a private hospital in Auburn, died in Auburn, Me., March 26. His widow and a daughter, Louise, of Auburn, and a brother, Dr. Carolus Cobb of Lynn, Mass., survive.

CORRESPONDENCE

A LETTER FROM DR. EDWARD O. OTIS

The Massachusetts Tuberculosis League has just received from its Honorary President, Dr. Edward O. Otis, a communication from him while on the Steamship President Garfield, at Singapore. He is making a tour of the world.

Dr. Otis' trip is considered remarkable because of his advanced age. He is one of the oldest tuberculosis specialists in the United States, and is a member of the faculty of Tufts College. For many years he has been head of the Tuberculosis Clinic of the Boston Dispensary. The message reads as follows:

To my friends in Massachusetts:

You may like to get a line from your Honorary President from this side of the globe.

By the time we reached Kobe, Japan, we had been about forty odd days at sea. The Pacific Ocean is a big sea to cross and it was gratifying to see land at Japan at last.

It is a strange sensation to land in a country where you can neither speak nor read nor understand the language and where the customs and habits of life are so different and strange. Women carry their babies on their backs and most everybody wears wooden shoes which make such a racket. The houses seem like baby ones and have no heat except perhaps a brazier of charcoal. You have to take off your shoes when you enter a house or temple, and you sit on the floor if you eat in a Japanese house. The women wear no hats (what a saving!) and dress in bright colors—while men wear sombre black garments. In China the women wear trousers and the men dresses or what look like them. They have no Sunday and work seven days a week.

As we rode through the country in Japan we saw innumerable rice fields and tea plantations. In some places snow was on the ground and oranges on the trees. A strange topsy-turvy country where "there ain't no ten commandments," as Kipling says.

The Chinese are a wonderfully industrious people and such a mass of them. I wish I could bring a couple home. On this ship we have all Chinese servants. It is most fascinating to wander through the narrow Chinese streets and see how they ply their trade and their curious wares. Shanghai interested me particularly for its immense shipping in the harbor and its Chinese quarters, but Hongkong was the gem, beautifully situated, the city lying at the foot of the mountain. The rides and excursions were most charming and such excellent roads. The several local means of conveyance are by rickshaws drawn by one man or runner, or chairs carried by two men—a very comfortable way of locomotion.

Every place has a new money system—in Japan it is the yen (50 cents), divided into 100 sen; in Shanghai the Mexican dollar (50 cents), and in Hongkong a mongrel English and Chinese coin similar to the Mexican dollar; in Manila it is the peso (50 cents).

After Hongkong, Manila was rather tame except the beautiful bay. The Philippines are rather good looking and quite brown.

So we travel from place to place to new scenes and experiences. In our latitude we are all wearing white summer clothes and have forgotten the northern winter.

I trust all is well with you and the League, and you had a good Seal Sale.

Most cordially yours,

(Signed) EDWARD O. OTIS.

THE USE AND ACTION OF ORTHO-IODOXY BENZOIC ACID

Editor, Boston Medical and Surgical Journal:

So many inquiries have been received concerning a recent paper on "The Use and Action of Ortho-iodoxy Benzoic Acid" that a few additional statements of facts and observations seem to be indicated.

1. The drug is manufactured by the Abbott Laboratories, North Chicago, Illinois, and sold under the trade name of Amiodoxyl benzoate in the form of a highly purified ammonium salt which is freely soluble in water. For intravenous administration Amiodoxyl benzoate is dissolved in sterile normal saline or distilled water in one per cent. concentration. The solution should not be boiled or autoclaved. The cost of the drug varies with the quantity purchased, as it is sold in one gram doses put in vials and in bulk lots. The single vials retail at about one dollar each. In lots of fifty grams the cost is about sixty cents per gram.

2. While the drug, when given orally, produces, as a rule, a much stronger and more rapid salicylate effect than sodium salicylate or acetylsalicylic acid, the beneficial effect is by no means comparable to that obtained by intravenous administration. The present cost of the drug practically prohibits oral administration. On the other hand, the effects obtained by intravenous administration fully justify a trial despite the cost.

3. The result obtained in the above mentioned paper were with the use of the free ortho-iodoxy benzoic acid, this being dissolved for intravenous injection by the addition of concentrated ammonium hydroxide drop by drop. This preparation caused the severe reactions reported in the paper. Since the paper was presented for publication the ammonium salt (Amiodoxyl benzoate) has been available and has been tried in twelve cases with comparatively mild reactions. A severe reaction occurred only in two cases; in one the dose given was 1.5 grams, and this may be considered a large dose, and in the other the patient seemed to be sensitive to the drug, as a severe reaction was obtained with only 0.5 gram. It has been found that the free acid when kept in bulk slowly decomposes and liberates some toxic product with a strong odor. It is probably this product which is responsible for the greater part of the reaction. The ammonium salt (Amiodoxyl benzoate) is stable and therefore causes very much less reaction. These observations may account for the fact that Young and Youmans place very little emphasis on the severity of the reaction. The ammonium salt (Amiodoxyl benzoate) is fully as effective therapeutically as the neutralized free acid originally used, and this would indicate that the severity of the reactions has nothing to do with the beneficial action.

4. In the series of cases reported in the above mentioned paper, and in several cases which were not reported, there has been noticed the frequent occurrence of associated allergic phenomena such as urticaria, asthma, unexplained fever, and gastrointestinal upsets. This has been observed so frequently that it has led the writer to the belief that some forms of arthritis may be allergic manifestations. In several of these patients it was definitely established that the source of toxin absorption was the gastro-intestinal tract, and in this latter group the drug produced slight, if any, relief. Particularly when given by mouth no relief was obtained and there was some suggestion of an aggravation of symptoms. In one case a severe and persisting urticaria appeared after rectal administration. These observations have led the author to caution against the use of the drug, and salicylates in general, in cases in which there is a suspicion that the seat of toxin absorption is in the gastro-intestinal tract, for, as pre-

viously mentioned in the paper, Hanzlik has shown that salicylates increase the permeability of loops of intestine. The absence of constipation does not necessarily eliminate the intestinal tract as a focus of bacterial toxin absorption. The presence of a highly putrefactive stool is very suggestive evidence, so is chronic constipation, and the inability to find after thorough search any other focus should make one suspicious of the intestinal tract.

5. In the latter cases an intestinal antiseptic sold under the trade name of "Dimol Pulverettes A" (dimethyl-methoxy-phenol), having a phenol coefficient of 30, and being unabsorbed from the gastrointestinal tract, has proved efficacious. This drug is distributed by Fougere Company, New York City.

6. It is important again to emphasize, contrary to usual teachings, the need for early active motion, despite pain, in acute joints. This should be combined with muscle massage to relieve muscle spasm and prevent atrophy. If this is faithfully practiced there should be less resulting deformity and cartilage destruction. The writer is strongly of the opinion that baking without muscle massage and active motion is contraindicated for the reason that it dilates capillaries and increases joint effusion. The most important function exhibited by ortho-iodoxy benzoic acid is that of sufficiently relieving muscle spasm, pain and swelling in both acute and chronic joint conditions, so that the patient can actively use the affected joints without the usual extreme discomfort.

MILLARD SMITH, M.D.

THE RETURN OF DR. REMICK

The Commonwealth of Massachusetts
Department of Public Health
State House, Boston

March 19, 1927.

Editor, Boston Medical and Surgical Journal:

May I announce through your columns the appointment of Dr. Sumner H. Remick as Director of the Division of Tuberculosis (Sanatoria) of this Department. As you know, he resigned from this position a year ago. Since then Dr. Henry D. Chadwick has been Acting Director of the Division as well as chief of the clinic staff which is conducting the examinations of underweight children in the schools and superintendent of the Westfield State Sanatorium. This was obviously too great a burden to impose on Dr. Chadwick for long and the State is indebted to him for the burden which he has been willing to temporarily assume. We are then particularly fortunate in having Dr. Remick return to us because of the important part he has played in developing the present tuberculosis policy of the State and because of his entire familiarity with the tuberculosis problem as it exists in Massachusetts.

Yours truly,

GEORGE H. BIGELOW, M.D.,
Commissioner of Public Health.

LONDON LETTER

VOLUNTARY HOSPITALS IN GREAT BRITAIN

Sir Kingsley Wood, M. P., Parliamentary Secretary to the Minister of Health, and who acts as the official mouthpiece of the Ministry, said in a public speech he made the other day, that there was an increasing demand up and down Great Britain for convalescent home treatment, which had undoubtedly proved of great benefit. As a result of the second valuation of approved societies, an annual sum of £200,000 (£1,000,000) had been provided for convalescent home treatment, and in addition nearly £300,000 (£1-

500,000) a year for payment to hospitals. No fewer than 2,200 schemes already approved by the Ministry of Health included payments for members going into convalescent homes. The number of members covered by societies in those schemes was nearly 10,000,000.

Referring to the hospital question, Sir Kingsley Wood said that the British government stood firmly by the voluntary system, and would do everything possible to encourage the voluntary organizations and hospitals. One of the best signs of the time was that during the past two years the voluntary hospitals had demonstrated their vitality and hold on the people of this country. The government policy was wholly opposed to the creation of a state medical service. It would not be in anybody's interest to take the work done by the medical practitioners of the country and place it in the hands of whole-time public servants. Nothing would be gained by such a course, and much would be lost. One of the most important reasons for Poor Law reform was the urgent need for a better coördination of the hospital service. This appeared to be quite unattainable without the reform of the Poor Law. However, while it seems to be a matter of almost universal agreement among members of the medical profession and of the community at large alike, that the voluntary system shall not be overturned in Great Britain, there is also complete unanimity that the system must be subjected to some radical changes. One of the changes, and that most urgently called for, is the establishment of paying wards in all the large hospitals. At the present time, there are two classes of society which receive adequate, skilled and efficient treatment under good sanitary and hygienic conditions. These classes are the working classes—that is, the manual workers—and the rich. Hospitals in Great Britain (founded as religious institutions) are endowed for the benefit of the indigent, and the indigent have been considered to be those who worked with their hands and presumably lived by the sweat of their brows. These are not the really poor in existing circumstances; the poor, as a rule, are the large and poorer strata of the middle class, ill paid clerks, the "white collar" brigade, the well-born people whom the war has brought to indigence almost, and the professional class, as lawyers, medical men and so on, the rank and file of which struggle along, taxed to the limit of their endurance, upon a small income, and the smaller tradesmen.

This immense class in case of illness have practically nowhere to go to obtain skilful treatment and good nursing. The hospitals, for the most part, are barred to them, even if their pride would allow them to ask for admittance; and the nursing homes, such as they are, are beyond their means entirely. Consequently, they are treated in their homes, in no respect adequate or fitted for the treatment of any kind of lengthy illness, and most certainly not for serious illness. They are attended by the ordinary general practitioner, and nursed by their own people. The poor, or so-called poor, in the hospital have the best treatment and nursing that the country can give; the rich, in their homes or in nursing homes, come off second best; while the really poor and, on the whole, the most self-respecting and deserving part of the community have just to put up with what they can get, and grin and bear it.

The hospitals are cognizant of this difficult problem, and most of the larger ones are making efforts to solve it, and contain paying wards to a greater or less extent, although they lack sufficient accommodation to cope with the exigencies of the situation. It means the expenditure of very large sums of money in bricks and mortar to provide the accommodation needed, as now all the big hospitals are cramped in their accommodation and have long waiting lists. It would be unfair to those who are strictly entitled to use hospitals to withdraw a portion of the limited

accommodation now available, for that particular class who are supposed to be able to pay for efficient medical and nursing service, and yet this need not deter hospitals from extending their service to this long-suffering class. It seems that the difficulty might be overcome, at least in some degree, by establishing a sliding scale of payment for patients—that is, when there is accommodation for them; when there is not accommodation money must be raised to supply it.

In King's College Hospital, provision has been made for a fairly wide range of patients of various financial conditions. There are beds in cubical wards, for which the charge is £5:5/- (\$26); rooms with two beds, for which the charge is £6:6/- (\$31.50) each; and single rooms at £8:8/- (\$42) a week. These charges cover the whole cost of maintenance. The only exceptions are when the condition of the patient requires the engagement of a special nurse and massage treatment. In addition the patients pay for the services of the medical staff, including the pathologist and the radiologist. Their fees are based on the circumstances of the patient. It should be mentioned, however, that in King's College Hospital wards are being used for paying patients which were intended for general patients, as funds are not available for them in that way. Still, as said before, it is now recognized that hospitals should extend their benefits so as to give direct service to the entire community, and therefore it is essential that the hospital of the future should provide accommodation for private patients of various grades.

Some there are who recommend that what is termed the American method should be adopted, whereby the rich man pays a great deal more than the cost of his hospital treatment, both as regards professional fees and maintenance, in order that his less wealthy brother may be treated below cost. In any event, if the voluntary system is to continue in Great Britain, it must be modified to fit in with the present conditions of affairs, and especially it must be modified or altered in such a way that the large overburdened middle class may be enabled to obtain the same kind of skilled medical attendance and nursing which is open to the manual workers in the big hospitals with their up-to-date equipment, and to those who have the "command of money."

WAR ON DISEASE

On January 14 last, Sir Berkeley Moynihan, the new president of the Royal College of Surgeons of England, delivered the Hunterian Oration. He began by pointing to the fact that in this year the 199th anniversary of the birth of John Hunter and the centenary of the birth of Lister is, and was to be celebrated. The speaker emphasized the point that from the aspect of surgery these two stood apart by reason of the immeasurable gifts which they had conferred upon their fellow men. Hunter, who regarded **operative surgery** as a confession of failure, anticipated that a time would come when surgery, gaining much from the general advance of knowledge, might be rendered both knifeless and bloodless. It was not ironical to say that Lister's work had brought them appreciably nearer to Hunter's ideal. Surgeons of today were slowly building up knowledge from which their predecessors were completely debarred, not new science but new vision of old science, the pathology of the living. This branch of surgery would continue to grow, and therein surely lay their hopes that surgery might one day help to end surgery by enabling them to discover how these earliest processes of disease might be **annihilated**.

It may be said with much truth, although Sir Berkeley Moynihan did not go so far as this, that the future of medicine lies largely in prevention, and the surgeon realizes this as the physician realizes it. Preventive surgery has a wide scope, not only in orthopedics, in the treatment of which physical ther-

apeutics, massage, active movement of fractures and dislocations, heat, light and so on are important factors, but operative surgery itself is to a large extent preventive, as, for instance, in enlarged tonsils and adenoids, phimosis, hernia, ophthalmia, in certain deformities in general surgery and, perhaps, in industrial surgery in particular.

Medicine and surgery are curative, preventive, reconstructural and educational. Their commencement is with the beginning of disease and not with its end results, and deformity and disability are prevented. In short, the aim is to restore function. All the so-called medical sciences are concerned: chemistry, physics, electricity, biology, anatomy, physiology, pathology, and pharmacology, medicine, surgery and therapeutic. These are interdependent so far as they are practical and perfect, all employed in their proper places and thus made into educational and economic value. In time disease will be blighted at its origin.

INTERNATIONAL HEALTH INSTITUTE, INC.

American Medical Association
535 North Dearborn Street, Chicago

March 22, 1927.

Editor, *Boston Medical and Surgical Journal*:

A week or so ago you wrote to us for information on the "International Health Institute, Inc.," of New York. We are now in a position to give a little more information.

The International Health Institute is at present, it seems, nothing more than a paper organization. It has for its president one Charles Berminster Munro, who used to be with the Long Beach National Bank at Long Beach, Long Island. Its vice-president is J. C. Lipsey, who is said to have been employed in an executive capacity by A. W. Hyde & Co., Inc., 2061 Broadway, New York City. The secretary is Gerard Warren Proctor, who is assistant sales manager of A. W. Hyde & Co., Inc. The assistant secretary is George W. Smith, whose antecedents we know nothing about.

Although we requested the International Health Institute, Inc., to give us the names of the incorporators, this request was not complied with. We have learned, however, that the incorporators were Josephine Applebaum, Thomas Le Petri and Amelia Decker. These three individuals, apparently, were mere figureheads whose names were used by the attorney for the International Health Institute, in order to comply with the State law requiring three adult residents of the State of New York to sign the papers of incorporation.

The concern states that it intends to render a service similar to that of the Life Extension Institute, with four quarterly physical examinations and four urinalyses, "supplemented with a complete course in body-building and rules of right living." They state that they will pay a fee to regular registered physicians to make physical examinations, and we believe that the fee that they offer is \$3, which, of course, is hopelessly inadequate for any physical examination that is worth while.

As you know, *The Journal* has taken the attitude for some time that there is no good reason for the existence of these various concerns that sell a urinalysis service, together, in some instances, with a physical examination. The proper person to do such work is the family physician, to whom the patient will be a human being and not a number. The physician who is familiar with the individual and his idiosyncrasies is in a position to give really valuable service in periodic examinations. The service that one gets from commercial concerns that are in this line is, even when honestly given, of indifferent value.

Very sincerely yours,

ARTHUR J. CRAMP.

BOSTON'S TUBERCULOSIS PROBLEMS

Editor, Boston Medical and Surgical Journal:

In their recently published reports on the tuberculosis situation in Boston both Dr. Murray P. Horwood of the Massachusetts Institute of Technology, acting for the Boston Tuberculosis Association, and Dr. Haven Emerson of New York, for Mayor Nichols, made similar recommendations aiming to improve an admittedly bad situation, the most important of which recommendations were as follows:

(1) That the municipal tuberculosis sanatorium at Mattapan and its administration be transferred to the Trustees of the Boston City Hospital, thereby doing away with its present independent Board of Trustees;

(2) That there be created as a division of the Boston Health Department a Division of Tuberculosis to handle all phases of the tuberculosis problem with the exception of its strictly institutional aspects;

(3) That the Out-Patient Department of the Boston Sanatorium and the nursing force connected with it be transferred to this newly created Division of Tuberculosis of the Boston Health Department;

(4) That there be carried on a policy of decentralization of this Out-Patient Department.

Arguments for these recommendations are most potent ones and can hardly be disputed. Massachusetts for years has stood in most unenviable isolation as compared with practically every other city of this size in this country in that its local health department has had little or nothing to do with the municipal tuberculosis problem. The need of the creation of a Division of Tuberculosis and the doing away of the present Board of Trustees is obvious. As a general rule it is recognized that it is not the function of a health department to administer institutions, although this is done successfully by the Massachusetts Department of Health as well as in San Francisco and other cities in this country. With this in mind, therefore, the recommendation that the municipal institution at Mattapan and others to be built in connection with it be carried on by the Trustees of the Boston City Hospital is a proper one.

At the present time there is one municipal Out-Patient Department, and *one only*, in this city. This department, housed in a new building recently constructed at great cost, is in immediate vicinity of the Boston City Hospital. In order to get diagnoses, treatment and general advice patients from all over the city must therefore travel great distances in order to go to this one Out-Patient Department to whose services they are justly entitled. This is a radically wrong situation. Both Dr. Horwood and Dr. Emerson recommend that it be remedied as soon as possible by decentralization of the Out-Patient Department.

In a recent communication to the Boston City Council Mayor Nichols in his desire to carry out these ideas of both Dr. Horwood and Dr. Emerson recommended that the Boston Sanatorium and its duties be transferred to the Boston City Hospital Trustees. Shortly after he had done this his attention was called to the fact that he had inadvertently included in this recommendation the Out-Patient Department and its functions as well as the institution itself. In a subsequent communication, therefore, he amended his original one by asking that the institution at Mattapan alone go to the Trustees of the Boston City Hospital but that the Out-Patient Department and the nurses connected with it be transferred to the Boston Health Department in accordance with Dr. Horwood's and Dr. Emerson's ideas.

There are some in this city whose opinion should be given careful weight who are of the opinion and

are prepared to maintain it that greater efficiency will result if the Mayor's original order were put in effect, namely, that not only the institution at Mattapan but likewise the Out-Patient Department be transferred to the Trustees of the Boston City Hospital. These individuals feel that under such an arrangement there is less danger of political interference and that closer cooperation between the Out-Patient Department and the Hospital will result.

While there is undoubtedly something to be said for these arguments, we are of the opinion that those arguments supporting Dr. Horwood's and Dr. Emerson's original recommendations are more potent ones. In the first place tuberculosis is a communicable disease and constitutes the most important health problem which confronts any health department. It is only right and proper, therefore, that the Health Department should be in charge of diagnoses, discovery of new cases, care of the ambulatory and home patients, and the general educational aspects of the problem. There is no conceivable reason why there should not be the closest cooperation between the institution at Mattapan under the Boston City Hospital Trustees and the Out-Patient Department, nursing force, etc., under the Health Department. The experience at Toronto, Detroit, and other cities shows clearly that there is no disadvantage under such a system as this. One of the most potent factors, however, in putting the Out-Patient Department and its workings under the Department of Health is the recommendation of both Drs. Horwood and Emerson that the present Out-Patient Department be decentralized. It is admitted on either side that the present system of only one dispensary to serve the population of Boston is an archaic and intolerable one. We feel and justly so that if the terms of this recommendation are not carried out much time, effort and money spent on these surveys of Drs. Horwood and Emerson will have been wasted. There are at present in the city of Boston four Health Units completely furnished and equipped for out-patient service such as this. Three of these Health Units are now already functioning; three more are to be built. These seven Health Units are the logical places for the new dispensaries which should be created under this plan of decentralization. These Health Units are already in the able hands of Dr. Mahoney and his deputy, Dr. Willinsky. An immense amount of money has been spent and more will be spent, amounting to \$300,000 each, for these Health Units, but it will be nothing but an utter neglect of opportunity if these Health Units are not used in this decentralizing scheme.

Therefore, in addition to the fact that tuberculosis is primarily a health problem and that its detection and supervision should come under the Health Department, from the point of view of cold cash and dollars and cents it will mean economy to the city of Boston if the Mayor's recommendation is adhered to, namely, that the Trustees of the Boston City Hospital take over the functions of the institution at Mattapan and that the Boston Health Department under a Division of Tuberculosis take over the Out-Patient Department and the nursing force which goes with it. To quote the exact words of Professor C. E. A. Winslow of the Yale School of Medicine, who studied this situation for the Community Health Association:

"Ideal results in dealing with tuberculosis can only be attained by transferring outpatient and nursing service for this disease to the Health Department under a full-time paid director. Whether this is effected or not, it is clearly essential for efficient results that clinic service for this disease should be decentralized, to the extent of developing at least six district clinics corresponding to the Major Health Centers (or Health Units) discussed in the body of our report."

JOHN B. HAMMOND.

NOTES ON NATIONAL AFFAIRS

(From Our Special Correspondent)

The Sixty-ninth Congress came to a somewhat inglorious end on March 4 and with it died practically all the legislation which might have been of particular significance to members of the medical profession. With the exception of a few minor bills and two measures to continue hospitalization for veterans at Saranac and Liberty, N. Y., respectively, only three laws with a real public health import were enacted. These were the milk importation regulation act, the act for the extension of the Federal maternity and infancy law for two years, and the act to control dangerous caustics and acids in interstate commerce. An endeavor will be made in our next letter to give a complete review of the medical legislation which was before this Congress and the action taken, or the lack of it, in the various sessions.

The Seventieth Congress does not convene until the first Monday in December next, unless the President sees fit to call a special session in the interim. In spite of the failure of Congress, especially of that august branch, the Senate, to adopt various necessary measures, more or less essential to the public welfare, it does not seem likely that a special session will be called, and even if it were, no legislation of medical interest would probably receive any particular attention. Such bills will have to start all over again, no matter how far they got in the last Congress.

FEDERAL HEALTH COÖRDINATION

Hearings on the Parker bill (H. R. 10125) for the coordination of the health activities of the national government were held before a subcommittee of the Committee on Interstate and Foreign Commerce of the House, on February 24 and 25. These hearings were notable not only for a brilliant array of witnesses, who testified in favor of the proposed plan, but also for the obvious interest in public health matters displayed by the members of the subcommittee and their apparent sympathy with the bill before them. On account of the lateness of these hearings in the session, no definite action could be taken, but the testimony will be printed and will make a valuable and interesting public document. It was, furthermore, not the fault of Congress that hearings on this important measure were not held until nearly a year after the bill had been introduced by Representative Parker, at the request of the leading sanitarians of the country, but because the bill failed for a long time to secure the approval of the Director of the Budget and only did get his sanction after the matter had been laid directly before the President himself.

Among those who appeared in favor of the proposal to give to the President authority to transfer by executive order to the Public Health Service bureaus engaged in public health work, or to require that scientific personnel be detailed from the Public Health Service to other agencies of the government doing health work, were Dr. William H. Welch, Dr. W. C. Woodward of the American Medical Association, Dr. S. W. Welch of Alabama, Dr. D. B. Armstrong, Dr. M. J. Rosenau of Harvard, Dr. F. S. Patterson of Pennsylvania, Dr. H. N. Bundesen of Chicago and your correspondent, for the American Public Health Association, Mr. George W. Fuller, representing the engineering profession, a delegate from the American Federation of Labor, and Surgeon General H. S. Cumming. The only opposition came from a Mr. S. M. Heulings, who, as an individual, objected to any possible cooperation between the Public Health Service and commercial organizations.

MEDICAL BILLS PASSED BY THE HOUSE

If medical legislation in this Congress had depended

only upon the House of Representatives, the score would have been fairly good, for the House passed a number of measures of direct interest to physicians. The failure of final enactment of these bills was due to the filibuster in the Senate, by means of which two men wrecked the whole course of public business. Among the bills passed in the House were the bill to make the President's physician a colonel; the bill for hospitalization of tuberculous veterans of the naval forces; the bill for an additional appropriation for the hospitalization of all veterans; the bill for the manufacture and control of medicinal liquor. None of these were passed by the Senate.

MINOR MEASURES ADOPTED

A number of bills of minor importance, but of casual interest to physicians, were passed by both branches of Congress. These included a bill permitting contract surgeons in the Army to be appointed and retired as first lieutenants in the Medical Corps; authorization for an appropriation to the Gorgas Memorial Institute of Tropical Medicine in Panama; expenses for delegates to a Pan-American Sanitary Conference at Lima, Peru; a bill for paying for blood transfusions in government hospitals; and a bill relating to the payment of fees of surgeons in Alaska.

OTHER PROGRESS

Hearings were held on the bill for a Philippine leprosy commission, and favorable reports were made on the bill for a division of safety in the Bureau of Labor Statistics, and on the bill for the control of dangerous caustics shipped in interstate commerce. No action was taken on the various narcotic measures. Senator King introduced a bill in the closing days of the session to repeal the act creating the United States Children's Bureau, but the bill did not emerge from committee.

AVIATION MEDICINE

Some time ago the Department of Commerce, which administers the Federal air commerce law of 1926, appointed a director of air medicine, Dr. Louis H. Bauer. Dr. Bauer has recently started negotiations for the establishment of courses in air medicine in the leading medical schools of the country, in order to qualify physicians to make the physical examinations of pilots and for other duties in connection with commercial flying in its medical aspects. Already a number of medical examiners have been designated in various States, although the list published by the Aeronautics Branch of the Department contains no names of Massachusetts physicians. In fact, the only one in New England is Dr. William B. Smith of Hartford, Conn. Eventually, however, it is planned to have a designated physician in every community where there is any kind of aeronautic activity.

JAMES A. TOBEY.

CONNECTICUT DEPARTMENT OF HEALTH

MORBIDITY REPORT FOR THE WEEK ENDING
MARCH 19, 1927

Diphtheria	27	German measles	15
Last week	37	Influenza	13
Diphtheria bacilli		Mumps	47
carriers	3	Pneumonia, lobar	50
Scarlet fever	151	Septic sore throat	2
Last week	109	Tuberculosis, pulmo-	
Measles	211	nary	23
Last week	77	Tuberculosis, other	
Whooping cough	53	forms	2
Last week	41	Gonorrhea	34
Bronchopneumonia	42	Syphilis	33
Chickenpox	126		

PREVALENCE OF DISEASES IN MASSACHUSETTS COMPILED BY THE STATE DEPARTMENT OF PUBLIC HEALTH

FEBRUARY, 1927

GENERAL PREVALENCE

Disease prevalence in February, 1926, was 50 per cent. greater than in February, 1927, due principally to the high incidence of measles last year. This February records the lowest number of cases reported for any February during the past decade. This is true in spite of the fact that scarlet fever was more prevalent than any February on record, contributing over one-fourth of the total cases.

More cases of mumps were reported than in any other February except 1924. Pulmonary tuberculosis, typhoid fever and chickenpox also were more prevalent than usual. Measles had the lowest incidence for any February since 1919. Diphtheria was lower than any previous February save 1926. The prevalence of anterior poliomyelitis is unusually low.

RARE DISEASES

Anterior poliomyelitis was reported from Lynn, 1; Wareham, 1; total, 2.

Dog-bite requiring anti-rabic treatment was reported from Arlington, 7; Boston, 3; Chelmsford, 1; Danvers, 1; Dedham, 2; Everett, 1; Lowell, 1; Marlboro, 1; Medford, 2; Natick, 2; North Andover, 3; Peabody, 6; Revere, 1; Somerville, 3; total, 34.

Encephalitis lethargica was reported from Everett, 1; Fall River, 2; Pittsfield, 1; Worcester, 1; total, 5.

Epidemic cerebrospinal meningitis was reported from Boston, 1; Brockton, 1; Cambridge, 1; total, 3.

Malaria was reported from Boston, 1.

Pellagra was reported from Boston, 1; New Bedford, 1; total, 2.

Septic sore throat was reported from Arlington, 1; Boston, 2; Cambridge, 1; Fall River, 1; Holliston, 1; Ipswich, 1; total, 16.

Trachoma was reported from Boston, 4; Cambridge, 2; total, 6.

MONTHLY REPORT OF CERTAIN COMMUNICABLE DISEASES

Diseases	Cases in entire population			Ratio of incidence to index	Case rates per 100,000 population		
	Feb., 1927	Feb., 1926	Prosodemic index		Feb., 1927	Feb., 1926	Expected rate†
All causes.....	8,304	12,956	—	—	194.5	307.1	—
Anterior poliomyelitis.....	2	4	6*	.3†	.04	.1	.1
Diphtheria.....	424	273	436*	.9†	9.9	6.5	10.2
Measles.....	855	6,441	2,763*	.3†	20.0	152.8	64.7
Pneumonia, lobar.....	484	499	724*	.6†	11.3	11.8	16.9
Scarlet fever.....	2,129	1,119	1,210*	1.7†	49.9	26.6	28.3
Tuberculosis, pulmonary.....	460	383	296*	1.5†	10.7	9.1	6.9
Typhoid fever.....	26	22	19*	1.3†	.6	.5	.4
Whooping cough.....	543	1,653	846*	.6†	12.7	39.2	19.8
Chickenpox.....	1,244	826	—	—	29.1	19.6	—
German measles.....	39	478	—	—	.9	11.3	—
Influenza.....	70	50	—	—	1.6	1.2	—
Mumps.....	1,306	347	—	—	30.6	8.2	—
Tuberculosis, other forms.....	65	65	—	—	1.5	1.5	—

*This index is an attempt to estimate the number of cases based on the trend during the past years which can be expected to occur, and is for the purpose of comparison with the number of cases which actually did occur.

†This ratio expresses how prevalent the disease is compared with the index mentioned above; 1.0 indicates that the actual number of cases equals the expected number. A larger number means a greater prevalence, and a smaller number a lesser prevalence than expected. Thus, 2.0 would indicate twice the expected number of cases, and .5 half the expected number of cases. The methods used to determine the index will be described in detail in an early issue of the Journal.

‡Calculated from the Prosodemic Index.

NEWS ITEMS

AN AWARD TO DR. CHEVALIER JACKSON—An award consisting of a medal, a diploma and a check for ten thousand dollars has been conferred on Chevalier Jackson of Philadelphia, professor of bronchoscopy and esophagoscopy in the University of Pennsylvania Graduate School of Medicine.

This Philadelphia award is endowed by Edward W. Bok as a yearly recognition for the resident of Philadelphia who, during the preceding year, has brought to culmination a service "calculated to advance the best and largest interests of Philadelphia." Dr. Jackson is the sixth recipient of this award.

The medical profession is gratified to have this honor conferred upon one who stands as having accomplished more in this particular field of practice than any predecessor. He has saved the lives of many patients who but for his skill would have died. His technic is being acquired by others who will be able to accomplish the same results.

REMOVAL OF OFFICE OF DR. ROCKWOOD—Dr. Ethel M. Rockwood announces the removal of her office from 12 Benefit Street to Suite 203, Professional Building, 27 Elm Street, Worcester, Mass.

NOTICES

NOMINATION OF MEDICAL EXAMINERS

THE Governor has nominated Dr. Edgar D. Hill as medical examiner of the third Plymouth District, and Dr. Pierce H. Leavitt an associate medical examiner of the first Plymouth District. Both of these men are Fellows of the Massachusetts Medical Society.

WEST SPRINGFIELD, NEW HAMPSHIRE, NEEDS A PHYSICIAN

THE Town of West Springfield, N. H., has appropriated \$1000 as a subsidy for a physician

who will locate there. There are about two thousand persons living in or near West Springfield within a radius of five miles. Apply to Arthur H. Metcalf, Selectman.

UNITED STATES PUBLIC HEALTH SERVICE

CERTAIN CHANGES OF DUTIES AND STATIONS OF COMMISSIONED AND OTHER OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE

MARCH 16, 1927

Surgeon A. J. McLaughlin—Directed to proceed from St. Louis, Mo., to Topeka, Kans., at request of Secretary of State Board of Health, about April 9, 1927, to attend school for health officers in that city on April 11-14—March 4, 1927.

Surgeon F. A. Carmella—Directed to proceed from Washington, D. C., on or about March 16, 1927, to Boston, Mass., via Marcus Hook, Pa., and return, to supervise transfer S. S. Wasdin from Marcus Hook to Gallops Island, and thence to Portland, Me., to inspect quarantine equipment and confer with medical officer in charge of Quarantine Station relative station matters—March 8, 1927.

Surgeon George Parcher—Directed to proceed from Portland, Me., to New York City, and return, upon receipt of advice from United States District Attorney, to appear in matters relating to the S. S. Ambridge, boarded by him at Boston Quarantine on September 1, 1927. (No expense to government involved.)—March 11, 1927.

UNITED STATES CIVIL SERVICE EXAMINATION

JUNIOR MEDICAL OFFICER (INTERNE), \$1,860-\$2,400

Applications must be on file at Washington, D. C., not later than June 30, 1927.

The United States Civil Service Commission announces an open competitive examination for junior medical officer (interne). Vacancies in United States Veterans' Bureau hospitals throughout the United States, and vacancies in positions requiring similar qualifications, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Salary and Promotion—The entrance salary for this position in the field service of the Veterans' Bureau is \$1,860 to \$2,400 a year without allowances, or \$1,260 to \$1,860 a year with quarters, subsistence and laundry, the entrance salary within the range stated depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned. Those who show only the minimum qualifications for admission to the examination will be eligible for appointment at the minimum entrance salary only. To those whose services are satisfactory, and in the discretion of the appointing officer, there may be granted a salary increase of not more than \$600 per annum at the end of the six months' probationary period required by the civil service rules, and at the end of 18 months the salary of \$3,300 a year, without allowances, may be paid in the discretion of the appointing officer and subject to the existence of vacancies.

Certification—In filling vacancies in the field service, ordinarily certification will be made of the highest eligibles on the register who have not expressed unwillingness to accept appointment at the salaries offered in the locality where the vacancy exists; but upon the request of the appointing officer certification may be made of the highest eligibles residing in the State (or States) nearest the place of the vacancy.

Citizenship and Sex—All citizens of the United States who meet the requirements, both men and women, may enter this examination; appointing officers, however, have the legal right to specify the sex

desired in requesting certification of eligibles. For this position in the Veterans' Bureau men are desired.

Applications—Applicants should at once apply for Forms 2118 (or 2600) and 2398, stating the title of the examination desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, Custom House, Boston, Mass.; New York, N. Y.; New Orleans, La.; Honolulu, Hawaii; Post Office, Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Calif.; Denver, Colo.; Old Custom House, St. Louis, Mo.; Administration Building, Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R.

GRADUATE NURSE AND GRADUATE NURSE (VISITING DUTY)

Applications will be rated as received at Washington, D. C., until June 30, 1927.

The United States Civil Service Commission announces an open competitive examination for the positions listed above. Vacancies in the Departmental Service, Washington, D. C., in the United States Veterans' Bureau, and in the Indian and Public Health Service, and in positions requiring similar qualifications, will be filled from this examination, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

Salary and Promotion, Departmental and Indian Services—The entrance salary for these positions in the Departmental Service is \$1,500 a year; and in the Indian Service \$1,680 a year less a deduction of \$180 a year for quarters, heat and light. A probationary period of six months is required; advancement after that depends upon individual efficiency, increased usefulness, and the occurrence of vacancies in higher positions.

Where a physician is included among the personnel of the Indian school, employees will receive free medical attention. Applicants for the Indian Service must attach to their applications statements as to the number in their families that will require accommodations at the Indian school or agency in case they receive appointment.

Salary, United States Veterans' Bureau—In the Hospital Service and District Medical Service of the United States Veterans' Bureau, the rates of pay are as given below. The entrance salaries are the lowest ones stated for each grade except where the isolation of the hospital or the character of the duties to be performed (in tuberculosis or psychiatric hospitals) renders a higher remuneration necessary. Appointments are usually made in the lower grades, the higher ones usually being filled by reinstatement or promotion. A deduction not to exceed \$600 a year for maintenance will be made from the salary of nurses on hospital duty where maintenance is furnished by the government.

Chief nurse, \$2,100 to \$2,700 a year; assistant chief nurse, \$1,860 to \$2,400 a year; head nurse, \$1,860 to \$2,400 a year; staff nurse, \$1,680 to \$2,040 a year; staff nurse (follow-up), \$1,680 to \$2,040 a year; head nurse (follow-up), \$1,860 to \$2,400 a year.

Nurses for follow-up duty with the claimants and beneficiaries of the Veterans' Bureau are selected from graduate nurse (visiting duty) certificate. Eligibles who fail to qualify as "follow-up" nurse will be rated as "graduate nurse."

Nurses for duty in dispensaries in the regional offices of the Veterans' Bureau must meet the requirements for graduate nurse.

Salary, Public Health Service—The entrance salary for nurses in the United States Public Health Service is \$1,800 a year where no additional allowance is furnished at the station to which assigned; when quarters, subsistence and laundry are furnished the com-

pensation is \$1,020 a year. After the probational period required by the civil service act and rules, advancement in pay, without material change in duties, may be made to higher rates within the pay range for the grade, up to a maximum of \$2,600 a year without allowances, or \$1,800 a year with quarters, subsistence and laundry. When a nurse is serving in a hospital for contagious diseases, or in a hospital for tuberculosis patients as a nurse to such patients, increased compensation is paid at the rate of \$120 a year.

REPORTS AND NOTICES OF MEETINGS

THE SPEECH READERS GUILD OF BOSTON

The Speech Readers Guild of Boston presents Dr. Arthur J. Cramp, Director of the Bureau of Investigation, American Medical Association, in an illustrated lecture entitled "Deafness Cure Quackery and Pseudomedicine," to be followed by the Shadowgraph by Reba B. Lawrence "A Cannibal Love Affair," as acted by "The Green Twigs," Wednesday, April 6, at 8 P. M., Pilgrim Hall, 14 Beacon Street. Tickets 35 cents, on sale at the Speech Readers Guild of Boston, 339 Commonwealth Avenue or at 14 Beacon Street, on the evening of April 6 for the purpose of meeting the expenses of the meeting.

THE TRUDEAU SOCIETY OF BOSTON

The next meeting of the Trudeau Society of Boston will be held on Tuesday, April 12, 1927, at 8:15 P. M., in John Ware Hall, Boston Medical Library, 8 The Fenway, Boston.

The speaker will be Dr. Edward R. Baldwin of Saranac Lake; subject: "Tuberculous Infection, With Especial Consideration of Its Quantity, Virulence and Frequency." Dr. Vincent Y. Bowditch, Dr. H. D. Chadwick, Dr. Cleaveland Floyd, Dr. John B. Hawes, 2nd, and Dr. Olin S. Pettingill have been asked to discuss this paper.

The meeting will be open to all, and it is hoped that there will be as large an attendance as possible to give Dr. Baldwin a hearty welcome to Boston.

RANDALL CLIFFORD, *Secretary*.

MEETING OF THE BOSTON ORTHOPEDIC CLUB

THERE will be a meeting of the Boston Orthopedic Club in the Sprague Hall of the Boston Medical Library, on Monday evening, April 4, 1927, at 8:15 P. M.

PROGRAM

1. Orthopedic End Result and Follow Up, Dr. William Rogers.
2. Fractures of the Elbow, Dr. Nathaniel Allison.
3. Progress in the Care of Cripples, Dr. Robert B. Osgood.

R. K. GHORMLEY, *Secretary*.

NEW ENGLAND PEDIATRIC SOCIETY

THE one hundred and first meeting of the New England Pediatric Society will be held at the Boston Medical Library, on Friday, April 8, 1927, at 8:15 P. M.

William P. Dewees, 1768-1842: A Pioneer in American Pediatrics, Arthur Bates Lyon, M.D., Boston.

Endocrine Disturbances of Childhood, Fritz B. Talbot, M.D., Boston.

Light refreshments will be served after the meeting.

J. HERBERT YOUNG, M.D., *President*.

THOMAS H. LANMAN, M.D., *Secretary*.

LECTURES ON "MUSCLE-NERVE PHYSIOLOGY"

PROFESSOR A. V. HILL, of the University of London, now universally known through his contributions to muscle-nerve physiology, delivered a series of two lectures at Harvard Medical School, on the afternoons of March ninth and eleventh, 1927, respectively, on "Viscosity of Muscle," and "Heat Production in Nerve."

Professor Hill pointed out in his lectures on "Viscosity of Muscle" that in muscular contraction there are two things to be considered: the conservation of energy, and the dependence of speed of movement on certain factors, such as size of the animal, length and amount of the contracting muscle, and the inertia or viscosity of the muscle.

The fact that the viscosity of the muscle is the most important factor is shown by experiments in which the faster a muscle contracts the less work is done. This viscosity is increased by stimulation which had led investigators to believe that there is a crystalline form to the muscle which upon rearrangement gives off energy.

In applying these results to athletes, it was found that an athlete could be spoken of in terms of the viscosity of his muscles, the viscosity being less in the more proficient man. In running a hundred yards an oxygen debt of 6.7 litres is attained. Since other factors are negligible, it must be the viscosity of the muscles which cause this enormous debt. Accordingly, it was found that 144 pounds of a 160 pound man are used in overcoming this viscosity, or about eight horsepower is developed in a first-class runner. This becomes one and a half times as great in the recovery period.

In speaking of "Heat Production in the Nerve," Professor Hill told of the marvelous delicacy of the instruments needed to measure the heat given off in excitation. This sensitivity was enough to measure 2x10-12 (two million millionths) of an ampere. It was found that the initial heat production lasted about fifteen seconds and then a new low level was reached and maintained for ten minutes. This heat did

not increase in proportion to the frequency of the current, but was at first greater, then smaller, and finally at the higher frequencies, the two curves coincided. It was also found that the return of excitability was much faster than the return of energy.

One of the more interesting results was that in general there is metabolism in the nerve comparable in every way to that in the muscle. A nerve does not conduct impulses without oxygen, and more oxygen is used in conduction. It was proved, though not more than a month ago, that a nerve can make carbon dioxide after complete deprivation of oxygen. A nerve is found to be fatigable, which is contrary to quite recent teachings. There is an oxygen debt in the nerve due to lactic acid formation and accumulation. It is quite conclusively proved that muscle and nerve are quite similar in their metabolic processes.

The lectures were well attended and proved of great interest. They were accompanied by lantern slides throughout.

HOSPITAL CLINICAL CONGRESS OF NORTH AMERICA

The Hospital Clinical Congress of North America, in conjunction with the 12th Annual Convention of the Catholic Hospital Association of the United States and Canada, will stage a Clinical Exposition of the Hospital in its entirety at the Milwaukee Auditorium, Milwaukee, Wisconsin, June 20-June 24 (inclusive), 1927, conducted under the auspices of the College of Hospital Administration, Marquette University, Milwaukee, Wisconsin. Organizations invited to participate are: American Association of Hospital Social Workers, American Association of Industrial Physicians and Surgeons, American Association of Railway Surgeons, American College of Physicians, American College of Surgeons, American Conference on Hospital Service, American Dietetic Association, American Hospital Association, American Medical Association, American Nurses' Association, American Protestant Hospital Association, American Psychiatric Association, American Red Cross, American Urological Association, Association of American Medical Colleges, Canadian Nurses Association, Department of Commerce, Division Simplified Practice, International Catholic Guild of Nurses, Interstate Post Graduate Assembly of America, Medical Department of the United States Army, Mellon Institute University of Pittsburgh, National League of Nursing Education, National Organization for Public Health Nursing, National Safety Council, National Tuberculosis Association, Radiological Society of North America, Rockefeller Institute for Medical Research, United States Public Health Service, United States Veterans Bureau.

Address all communications to C. P. Lambert, Director of Exhibits, College of Hospital Administration, 124-13th Street, Milwaukee, Wisconsin.

HARVARD MEDICAL SOCIETY MEETS

THE last meeting of the Harvard Medical Society was held Tuesday evening, February 15, at the Peter Bent Brigham Hospital. The program consisted of presentation of cases by hospital internes, and a lecture by Dr. Henry Pinkerton on "The Reaction of Oily Substances Entering the Lungs."

The first case, presented by Dr. Bird, was a man of 63, who entered the hospital with a fractured left patella. An open reduction and an alcohol fixed fascial suture of the transverse fracture was done to approximate the bony surfaces. This alcohol fixed fascia lives just as living fascial transplant would live, and in the end the original collagen fibers are present in the graft and new fibroblasts and blood vessels grow into this tissue making it a tissue indistinguishable from the original tissue. The grafts need not be from the same animal, and thus can be used for transplants for any operation of this nature. The case had healed well by first intention, there being no tenderness after ten days. The case was shown to illustrate that the alcohol fixed sterile graft used does become alive again, and that this type of graft provides a highly satisfactory method of securing approximation in certain types of fractures.

The next case, presented by Dr. Potts, was a man of 36, who entered the hospital three weeks ago complaining of pain in his right chest and a cough of three months' duration. His family history revealed that one brother had recently died from tuberculosis. Past history revealed recurrent attacks of pleurisy without effusion for the past six years. Six months ago he had swollen inguinal glands, which were finally incised and drained for several weeks, after which he developed phlebitis of the right leg, which kept him in bed for six weeks, but gradually subsided. Three months ago he was seized with an attack of pain in his right chest, accompanied by dyspnoea and an annoying cough, which kept him in bed for several weeks. One month ago he was taken suddenly with shortness of breath and coughed up about a pint of blood. His physician at this time found acid fast bacilli on one occasion. Physical examination upon entry into the hospital showed flatness of right chest two-thirds of the way to the scapula, and heart, trachea and mediastinum pulled toward the right. His blood, urine and sputum examinations were negative. X-ray after admission showed marked clouding of the entire right base of the lung with displacement of the heart and trachea to that side. X-ray three weeks later showed the lung cleared considerably, but with a more marked displacement of heart and trachea, with organization and fibrosis in the base of the lung, with also a suggestion of a cavity. Plates taken after lipiodol was injected through a bronchoscope showed the cavity to be a typical bronchiectasis. Tuberculosis, tumor, atelectasis and infarction were considered as the diagnosis. Dr. Fitz favored tuberculosis, while Dr. Frothingham suggested the condition as the end result of an in-

faret, the source of the embolus undoubtedly being from the patient's attack of phlebitis.

The last case, presented by Dr. Schneek, was a man of 65, a stone-cutter, who entered the hospital complaining of shortness of breath. Past history revealed he had definite exposure to dust during his years as a stone-cutter. Physical examination revealed dyspnoea, swollen ankles, an enlarged heart with absolutely irregular rhythm, and the usual findings of myocardial failure. Examination of the chest showed râles at the base, and chest plates revealed definite silicosis.

Dr. Sossman in commenting on this case said: "The striking thing is the comparatively black areas in the lung with little spotty areas of increased density scattered along the bronchial margins. That is the so called first stage. We divide these by X-ray into first, second, and third stages. This case shows the first, or possibly the beginning second stage of silicosis where you have a moderate diffuse fibrosis without the diaphragmatic irregularities or adhesions and without the patches of atelectatic lung that eventually follow silicosis."

Dr. Henry Pinkerton of the Department of Pathology was then introduced and lectured on "The Reaction of Oily Substances entering the Lungs." Six cases were found among 290 consecutive children autopsies, making an incidence of one case in every 50 deaths. The source of the oil was briefly discussed. One source is the use of oil drops into the nose in cases of acute respiratory infection in infancy, much oil finding its way into the lungs via the trachea. Another source is the giving of mineral oil and cod liver oil by mouth to infants. Tube feeding and the passage of the stomach contents during vomiting were mentioned.

Dr. Pinkerton stated that grossly the lungs in these cases are not distinguishable from an infectious bronchopneumonia, and that microscopically oil is found in the alveolar walls of these lungs and there is very marked connective tissue proliferation. He stated that the nature of the oil could be determined by suitable stains, e. g. cod liver oil is stained black by osmic acid, while mineral oil does not stain, and Scharlach Red is a general stain for fats and oils.

To what extent the death of the child is due to the absorption of the oil was discussed by Dr. Pinkerton. He stated that in each case there was present a definite broncho-pneumonia at autopsy, but that its relation to the aspiration of the oil was hard to prove. Experimental work along this line has revealed that cod liver oil injected intratracheally calls out by far the most striking reaction in the lungs there being a proliferation of connective tissue around and into the oil, and also giant cell formation within three weeks. In the case of milk fat giant cell formation and fibrosis is also found. With mineral oil fibrosis and giant cell formation is not seen until two months. Vegetable oils, of which lipidol and iodipin are examples, call out no response

whatever. The reason for this striking difference must undoubtedly be sought in the chemical nature of the oil.

Lantern slides were shown, demonstrating the different oils and their effects in the lungs.

LECTURE ON PSYCHOTHERAPY

DR. MORTON PRINCE, Associate Professor of Abnormal and Dynamic Psychology of Harvard University, delivered a lecture Friday afternoon, March 18, on "Principles and Art of Psychotherapy" at the Harvard Medical School, the lecture being sponsored by the Phillips Brooks Association of Cambridge.

Dr. Prince stressed in his lecture the importance of functional diseases, stating that the majority of the sick people with whom the practicing physician deals are in this class. He pointed out that a functional disease may imitate practically any known disease, especially common being epilepsy, heart and gastro-intestinal diseases. The question of what method of psychotherapy that should be used after the diagnosis of these cases were established, was considered. Dr. Prince pointed out that these functional diseases were cured by the early practicing physician long before psychotherapy was established as a science and an art, by resorting to such aids as occupational-therapy, rest cures, and travel. These methods still obtain at the present time in the less severe cases, but in those cases that cannot be benefited by such measures, a more technical method of procedure is resorted to.

The basic principle underlying the treatment of these functional cases was given by Dr. Prince as the reëducation of the mind and personality, that is, educating it out of its present habits and functions. The form of education to employ depends entirely upon the patients, including the age, individuality, and the degree of culture. Since psychotherapy is an applied science, and by this virtue, an art, it cannot be taught, but the fundamental principles which make the art possible can be taught. The most successful and logical methods of teaching these basic principles are: first, *simple explanation* and this in such a manner that it will be accepted and incorporated as a part of the personality, and second, *suggestion*, which means hypnotism to the extent that the person in question will accept your point of view. Under suggestion Dr. Prince also listed such alternatives as faith cures, spiritualism, new thought, and similar expedients. How the mind so influences and changes the existing functional disorders is no more understandable than how the mind brings the functional disorder upon the patient.

The still more difficult cases, known as the obsessional cases, which include the phobias, the hysterias, and the multiple personalities, require deep study and analysis to discover the

underlying factor in the disturbance. That this factor must be disclosed before we can outline any treatment, was stressed by Dr. Prince. Re-education of the patient is impossible without this knowledge.

Dr. Prince discussed also the class of patients he calls the inferiority complex group, and volunteered a treatment based in the main upon the above principles. Throughout his lecture Dr. Prince illustrated his points by citing cases which had come under his observation and care.

SOCIETY MEETINGS

DISTRICT MEDICAL SOCIETIES

Essex North District Medical Society

Wednesday, May 4, 1927—Annual meeting. Russell Hall, Young Men's Christian Association Building, 40 Lawrence Street, Lawrence.

Thursday, May 5, 1927—Censors meet for examination of candidates at Hotel Barlett, 95 Main Street, Haverhill, at 2 P. M.

Essex South District Medical Society

Wednesday, April 6, 1927—Danvers State Hospital, Clinic, 5 P. M. Dr. Allan W. Rowe, Chief of Research Service at Evans Memorial, "The Differential Diagnosis of Endocrine Disorders." Followed by dinner. Discussion by Drs. Wood of Hathorne and Kline of Beverly, ten minutes each.

Thursday, May 5, 1927—Censors meet for examination of candidates at the Salem Hospital, 3:30 P. M.

Wednesday, May 11, 1927—Annual meeting. The Tavern, Gloucester. Speaker and subject to be announced later.

Norfolk District Medical Society

Below are the proposed meetings of the Norfolk District for the remainder of the year. Minor changes may be made in case of necessity.

May 10, 1927—Annual meeting. Details of meeting to be announced.

Suffolk District Medical Society

Meetings of the Suffolk District Medical Society and the Boston Medical Library will be held at the Boston Medical Library, 2 The Fenway, Boston, at 8:15 P. M., as follows:

April 27, 1927—Annual meeting. Election of officers. "Medical Education in the Orient and Occident," Dr. David L. Edsall, Dean, Harvard Medical School.

Notices of meetings must reach the JOURNAL office on the Friday preceding the date of issue in which they are to appear.

BOOK REVIEWS

Diseases of the Heart, Their Diagnosis and Prognosis and Treatment by Modern Methods.

By FREDERICK PRICE, E.R.S., (Edin.) Physician to the National Hospital for Diseases of the Heart; Consulting Physician to the Royal Northern Hospital, London. Second Edition. Oxford University Press, London, pp. 534.

We have not had long to wait for a second edition of Dr. Frederick W. Price's masterly treatise on diseases of the heart. It might well be supposed that the original edition had given us probably the most comprehensive outline of this branch of medicine in the English language, but even in the short intervening period the author has found it possible to add a great deal of new and valuable material. It is sufficient to say with regard to this, that on all the subjects originally dealt with Dr. Price has lived up to the standard he set himself in the first edition of his book of presenting in a concise and practical manner the most recent developments in cardiology. Fortunately for his readers the author is himself a clinician of the first rank, and he

has accomplished his task in an altogether admirable manner. Mention may be made in particular of the striking chapter on X-ray Examination of the Heart and Thoracic Aorta, and of the important discussion of the subject of Anaesthesia in Relation to Cardio-Vascular Affections.

We cordially welcome the second edition of a work which has been one of the most valuable contributions to medical literature within recent years.

Infant Mortality and Its Causes. By ROBERT MOORE WOODBURY, Ph.D., formerly Director of Statistical Research, United States Children's Bureau, The Williams & Wilkins Company, Baltimore.

This keenly analytical and somewhat technical volume discusses infant mortality, particularly in the United States, and shows, as far as is possible, through surveys that have been made and through statistical studies, the cause of this mortality.

As might be expected, the influence of prenatal care or its lack, of prematurity, breast and artificial feeding, the family economic status and infant welfare work have been brought out and analyzed. A chapter is devoted to the remarkable record of New Zealand, with the lowest infant mortality rate (40.2 in 1924) in the world. This rate is a result partly of favorable climate, good housing and exceptional economic conditions, but also largely to the widely known work of Sir Truby King in organizing this Royal New Zealand Society for the Health of Women and Children.

This work is particularly valuable to the student of infant hygiene for the clarity with which it attaches the profound problem and interprets the factor bearing on it.

Ultra-violet Radiation and Actinotherapy. By ELEANOR H. RUSSELL, M.D., and W. KERR RUSSELL, M.D., late Surgeon, War Pensions Hospital, Newcastle-on-Tyne, etc. pp. 262. 77 illustrations. Edinburgh, E. & S. Livingstone; New York, William Wood & Company. [1925.]

This book is written by two general practitioners, for the benefit of general practitioners, with the avowed belief that phototherapy should not be in the hands of the specialist alone. The style is popular, but very condensed, many topics being mentioned on a single page. The first eight chapters treat of ultra-violet radiation, its measurement, its physical properties, its chemical and biological effects, the various types of lamps and the technique of their use. The last five chapters are clinical, describing the therapeutic effects in skin diseases, tuberculosis, disorders of nutrition, and other diseases. Much

of the material is taken from the authors' own practice. The errors which we have noticed are few and unimportant. But in a few instances the statements seem rather too condensed; as, e. g., the following statement regarding incandescent electric light baths (p. 45): "By means of these baths the temperature of the skin can be raised to an intense heat (locally to 260° C., and generally to 204.4° C.) without danger." These high readings, so far as known to the reviewer, are obtained only from a thermometer with a blackened bulb, exposed, in the bath cabinet, to the radiation of light and heat from the lamps. If the skin itself were heated to any such temperature it would of course be killed. The volume ends with a brief bibliography and a good index. It can be highly recommended.

Studies in Intracranial Physiology & Surgery. The Cameron Prize Lectures. HARVEY CUSHING, M.D. Oxford University Press.

This little book consists of the three prize lectures delivered by Dr. Cushing at the University of Edinburgh in October, 1924, and each lecture is more or less an entity in itself. There is some cross reference, forward and backward, but the subjects are distinct and so each may be discussed by itself. There is an introduction and in it the author lays emphasis on the frequent failure of modern medical teaching in the matter of therapeutics. As he says in the second paragraph modern diagnosis "furnishes intellectual enjoyment." We all realize the interest of a difficult case and how soon we lose patience in our efforts at treatment, particularly if treatment, as so often happens, must be directed to making the patient comfortable rather than to curing the disease.

The first lecture is devoted to the cerebrospinal fluid and cerebrospinal spaces or as Dr. Cushing calls it, "The third circulation and its channels."

In this lecture is given in clear and concise form a good description of the spinal circulation and interwoven in this description is a delightful history of the investigations of this important and little understood department of physiology together with many references to the results of pathological changes and the surgical application of this knowledge. An hour on this chapter alone is indeed well spent.

The second lecture is a discussion of the hypophysis in the light of present knowledge, the first portion dealing with the physiology and anatomy of this organ and then running through pathology with a final word about tumors and surgical approach. Here again the subject is well covered and the text is all "meat."

The third lecture is on the surgery of brain tumors in general and sketches clearly the advances made in this department of surgery since its earliest beginnings. The last part of the

lecture is devoted to the classification of the gliomata according to Doctors Cushing and Bailey's recent study of the matter and an analysis of the relative malignance of the different types. This is one of the most important and far reaching of the recent advances in neurosurgery. It is too early yet to know whether or not this classification will be accepted in toto. Modification to a lesser degree at least is probable but it seems as though the principle were correct and that here we have the true explanation of the conflicting results found in a series of glioma cases.

The whole book is readable, up to date and concise. Dr. Cushing's style and choice of words are always admirable and this little book is no exception to the rule.

The Conquest of Disease. THURMAN B. RICE, M.D. Macmillan, New York. 1927. pp. 363.

Dr. Rice presents in a readable way some of major problems of public health. This book takes up preventive medicine from the point of view of the community rather than the individual, and for that reason is of most value as a record of accomplishments and is without any immediate practical application for the reader. Important as it is to set before the laity the results of our advances in the control of communicable disease, it would seem that the opportunity of presenting numerous facts of value to the individual should not be neglected. A number of charts serve to emphasize the statements made in the text. This book would be more valuable to the lecturer on public health subjects than to the majority of readers.

The Specialties in General Practice. By FRANCIS W. PALFREY, M.D. W. B. Saunders Co., Philadelphia, 1927. 729 pages.

This book which Dr. Palfrey has written in collaboration with representatives of the various specialties chosen from the faculty of Harvard Medical School is a very important and valuable addition to medical literature. It should prove of great service to any physician in general practice for each specialty is discussed by an authority in his respective field with ample detail, yet without spending time on the phases of interest to the specialist only. The conditions which the practitioner can safely treat are accorded most space while those requiring unusual skill or those rarely seen are discussed sufficiently to show when expert advice should be sought. The specialties considered are: dermatology, genito-urinary surgery, gynecology, rhinology and otology, obstetrics, ophthalmology, orthopedic surgery, otology, pediatrics, psychiatry, and surgery. Each section is arranged in a similar manner and the space allotted to each has been carefully balanced. It is written so

well that it can be read consecutively with interest, yet it is of great value as a reference book not only for the general practitioner but also for the specialist wishing information concerning another specialty.

Collected Addresses and Laboratory Studies.
London School of Hygiene and Tropical Medicine. Vol. II, 1925-26.

This is an attractive volume which opens with a clear description of the very excellent structure recently erected to house the London School of Hygiene and Tropical Medicine. This is followed by a number of interesting addresses pointing out some of the landmarks, the pioneers and the accomplishments in the field of tropical medicine and hygiene. The remainder of the volume consists of reprints by members of the staff of the school. These papers cover a wide range of subjects, special emphasis being placed on protozoa and helminths.

Even a brief glance at this volume is sufficient to convince the reader that we have in this country no facilities in fact or in prospect adequately to meet the requirements of this field of medicine. In the absence of such facilities in this country we can fortunately trust the profession in Great Britain to carry this work forward with enthusiasm.

A Statistical Survey of Three Thousand Autopsies. WILLIAM OPHÜLS. Stanford University Publications. 1926. pp. 357.

This study is a summary of the results of three thousand autopsies performed from 1900 to 1923 chiefly at the Lane Hospital and the San Francisco Hospital. The relative frequency of various diseases and abnormalities is considered and then the findings in the different morbid conditions are discussed in some detail, particularly tuberculosis, septic infections, arteriosclerosis, nephritis and tumors. While the study is difficult reading and of value chiefly from the statistical point of view, nevertheless it will be helpful to those interested in learning the relative frequency of morbid processes and the usual pathological changes in various disease conditions. Relatively few cases are considered individually and those considered are treated in the briefest possible fashion.

The Psycho-Pathology of Tuberculosis. By D. G. MACLEOD MUNRO. Oxford Medical Publications.

This little monograph consists of ten chapters with a bibliography and an index devoted to the various psychoses as they appear in the course of tuberculosis and their treatment.

Chapter II is devoted to the "Psycho-neuroses of Latent or Incipient Tuberculosis" and is a valuable one, calling attention to the various instances when patients are treated for neurasthenia, debility, hysteria, nervous exhaustion, etc., when they are really suffering from the effects of a tuberculous toxemia. In Chapters III and IV he takes up the psycho-neuroses of the moderately advanced and advanced stages of pulmonary tuberculosis and in my opinion he carries his theories to an extreme. After a good many years' dealing with consumptives in all stages I am unwilling to admit that there is any psychosis peculiar to the toxemia of tuberculosis.

In Chapter V he discusses the subject which he calls "Phthisical Insanity." I doubt if the neurologists and alienists of this country would agree that any such clinical entity exists and I feel that students of tuberculosis would agree with me that there is no special psychosis connected with this disease.

Chapter VI on "The Sexual Factor in Tuberculosis" is good. His remarks in regard to the marriage of the consumptive are sound and sane.

Chapters VII, VIII and IX are devoted to "Tuberculosis and Genius" in which he takes up the various famous characters in literature, art and the other professions who have succumbed to this disease early or late in their lives as the case may be and discusses them without coming to any conclusion as to the possible effect of the tuberculous toxemia on their talents or the reverse.

The final chapter he devotes to "Psychotherapy in the Treatment of Tuberculosis." As far as I can see this amounts to nothing more than auto-suggestion which I feel he carries to an extreme. There is rather a striking lack in his monograph in that at no time does he mention occupational therapy as by all means the best method we have at hand to combat various fears, phobias and other psychoses as they arise.

The Surgical Clinics of North America—New Jersey Number. December, 1926. The Surgical Clinics of North America (Issued every other month) Vol. VI, No. VI. 318 pages; 93 illustrations and complete Index to Vol. VI. Per clinic year, Paper, \$12.00; Cloth, \$16.00 net. W. B. Saunders Company, Philadelphia and London.

The clinics of especial interest in this number are those of Dr. Wells P. Egleton: Traumatic and Infective Lesions of the Head, the Chief Manifestations of Which are Visual Disturbances; Their Diagnosis and Surgical Treatment; of Dr. C. Rutherford O'Crowley on Treatment of Epithelioma of the Penis with Colloidal Lead and Surgery; of Dr. Edward W. Sprague on Management of Cleft-Lip and Pal-

ate Cases; and of Dr. Francis R. Haussling on Painful Shoulder.

Dr. O'Crowley has had two cases of Epithelioma of the Penis treated by Colloidal Lead and later amputation of the Penis, with autopsy of one of the cases. In both cases there was no deposit of visible lead in the tumor cells by histological examination. 15 cases of inoperable carcinoma and sarcoma have been treated by Martland, Von Sochocky and Hoffman at this same hospital with Colloidal Lead. In no case did they observe any inhibition or diminution in the original cancer or in its metastases. In 8 postmortems they showed that a stable colloid of lead does not reach the tumor in any demonstrable amounts. The lead is taken out of the blood stream by histiocytes of the reticulo-endothelial system and deposited in the spleen, liver and bone-marrow, where it gradually produces an intractable plumbic anemia that usually resists all detoxicating methods.

The De Lamar Lectures 1925-1926. Edited by W. H. HOWELL, Williams & Wilkins Co., Baltimore 1927. pp. 220.

These lectures given at the School of Hygiene and Public Health of Johns Hopkins University present in a semi-popular manner the knowledge concerning the prevention of disease and the conservation of health. There are a number of valuable papers in this volume covering a wide range of subjects.

One of the most interesting is that by Marine on the prevention of simple goiter. The lecture by Alice Hamilton, "Recent Advances in Industrial Toxicology," sums up in concise and interesting form our knowledge of this important subject. A statistical presentation of considerable interest is "Body Build and Longevity," by Louis I. Dublin, statistician of the Metropolitan Life Insurance Company. Attacking somewhat the same theme from a rather different point of view is that by Stockard "Constitution and Type in Relation to Disease."

Papers dealing with preventive medicine deserve a wide circulation, and the pleasant style and valuable material in this particular group makes this volume of the De Lamar lectures particularly valuable.

South America: Amplified to Include All of Latin America: The Vanduyck Cruise. By FRANKLIN H. MARTIN, C.M.G., D.S.M., M.D., LL.D., F.A.C.S. Revised edition. Fleming H. Revell Company. New York, Chicago, London and Edinburgh, 1927. xxiv + 435 pages.

The popularity of this small volume justifies the publication of a second and revised edition within five years. In addition to the material

in the 1922 issue, further accounts of visits by members of the American College of Surgeons to South American countries are set forth. The volume now presents an adequate summary of medical education and hospitalization in all the important South American cities, with descriptions of the leading surgeons and physicians interested in medical education.

The book would be of the greatest value to any physician contemplating a visit to our southerly neighbors. The reviewer feels, after reading the account of the splendid surgical work observed at various medical centers, that a trip to South America would be highly instructive as well as a delightful holiday.

Manual of Medicine. By A. S. WOODWARD, M.D. Physician, Lecturer on Medicine and Dean of the Medical School, Westminster Hospital; etc. Third Edition. Oxford University Press, 1927.

This compact volume (12 mo., 523 pages) is of interest because of the very large amount and variety of the material which has been summarized and condensed within it. The subjects included are practically the same as those of our larger textbooks of internal medicine, but since the discussions have been reduced to the barest essentials, one reads what is given as to each disease in perhaps one-quarter as many words. Moreover, in the reviewer's opinion, the descriptions are, in general, both sound and well stated, conveying quite vivid pictures of the respective diseases.

On the other hand there is doubt just what rôle such condensed manuals, which seem to be more in vogue in Great Britain than here, are fitted to play in medical education. They are too meagre to serve as the students' only textbook of this subject, but perhaps they may be useful either for preliminary study or for reviews.

The paragraphs on treatment in this volume are far less acceptable in this country than are those on description and diagnosis. Not only are there many recommendations which have an unfamiliar sound to us, such as leeches in peritonitis and in pericarditis, or cajuput for flatulence; there are also instances both of under-dosage and of over-dosage, according to our standards, as follows. In Rheumatic Fever, following the statement that "salicylates should be pushed," the prescription of sodium salicylate gr. XV "six-hourly" seems to us inadequate. On the other hand in the routine treatment of early Acute Rhinitis, "pulv. ipecac. co. gr. XV," which turns out to be Dover's powder, is stronger treatment than we usually give for colds. The important although uncertain subject of stimulation in pneumonia is dismissed with the statement "For cyanosis and

failing heart give cardiac stimulants—brandy, strychnine, digitalis, musk,”—and a list of others including inhalation of oxygen and venesection. From this the inexperienced reader can hardly be expected to gain much confidence.

The reviewer concludes, therefore, that while this book can be read profitably for the many important facts which it brings into prominence, its usefulness is distinctly limited.

Clinical Application of Sunlight and Artificial Radiation. By EDGAR MAYER, M.D. Williams & Wilkins Company, Baltimore.

This volume of Dr. Mayer's consisting of nearly 500 pages and more than 100 illustrations is divided into sixteen chapters and appendices and an excellent bibliography. It embodies all that is latest and best in our ideas concerning the use of sunlight and artificial radiation in the treatment of diseases.

There are certain chapters in which the physics of light and light radiation are discussed which are distinctly beyond the general practitioner and no one but physicists and students in this subject can understand them. The main part of the book, however, contains a wealth of valuable material while Chapter XI on the "Clinical Application of Solar and Aerotherapy" will prove of the greatest help to clinicians the world over. His attitude concerning light treatment is sane and sound although the reviewer is prone to admit that Dr. Mayer is tinged with the Saranae idea in that he overestimates the value of artificial therapy and does not give quite enough emphasis to the use of actual sunlight.

His conclusions concerning the use of x-ray treatment in various forms of tuberculosis are sound and the reviewer quite agrees that the "x-ray can only be offered as an adjuvant, and not as a form of therapy used to supplant general constitutional treatment. It constitutes a dangerous instrument in the hands of the untrained and had perhaps better be confined to use in sanatoria."

The bibliography is an exhaustive one, the illustrations are excellent and the photographs are well worth studying. The book is to be highly recommended in every way.

The Surgical Clinics of North America. June, 1926. Vol. 6. No. 3. Lahey Clinic Number.

The New England Deaconess and The New England Baptist Hospitals. W. B. Saunders Co., publishers.

This volume contains articles by the members of the Lahey Clinic. Dr. Burton E. Hamilton presents a very clear conception of heart disease in surgical cases, considering them as proper and improper risks, and also discussing congestive heart failure and angina pectoris in surgical patients. Proper and improper methods, and safe and unsafe indications for the use of ethylene and spinal anaesthesia are well treated by Dr. Lincoln F. Sise. The articles on thyroid disease are enlightening as usual and of great help to the student of this complicated disease. They give a description of their management of gastric cases in their clinic in detail, which is well worth reading. Dr. Lahey's article on emboli in peripheral vessels is excellent and shows what careful attention to symptoms, signs, and then proper surgery may do. Considerable is written about the use of intravenous glucose.

International Clinics. Volume 1. 36th Series—1926. J. P. Lippincott Co., publishers.

This is a collection of papers on varied subjects. It is divided into sections and contains articles on diagnosis and treatment, electrotherapeutics and physiotherapy, medicine and surgery, and concludes with a Progress of Medicine collated by Henry W. Cattell and James F. Coupal, and a recent Progress in Surgery by David C. Balfour.

Transactions of the American Gynecological Society. Vol. 50. For the year 1925. Edited by Arthur H. Curtis. W. J. Dorman, publishers.

A volume containing numerous papers of high value in the discussion of the newest progress in Gynecology and a fewer number of papers concerning obstetrics. An interesting article by Rubin on "uterine endoscopy" shows the possibilities of this new method of diagnosis. There are five articles on ectopic endometrium and adenomyomata, and this part of the collection of papers is very enlightening. A volume dealing with a special field with much of interest.